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THE
MODERN
PRACTICE OF PHYSIC,
EXHIBITING THE
CHARACTER, CAUSES, SYMPTOMS,
PROGNOSTICS, MORBID APPEARANCES,
AND
IMPROVED METHOD OF TREATING
THE
DISEASES OF ALL CLIMATES.

BY
ROBERT THOMAS, M.D.
AN HONORARY MEMBER OF THE LITERARY, HISTORICAL, AND
PHILOSOPHICAL SOCIETIES OF NEW YORK.

EIGHTH EDITION,
REVISED, AND CONSIDERABLY ENLARGED BY AN ADDITION OF MUCH NEW
AND IMPORTANT MATTER; THE PRESCRIPTIONS HAVING BEEN
ALTERED IN CONFORMITY TO THE LAST PHARMACOPŒIA OF
THE LONDON COLLEGE OF PHYSICIANS.

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TO

DAVID HOSACK, M. D. F. R. S. L. & E.

PROFESSOR OF THE THEORY AND PRACTICE OF PHYSIC
AND CLINICAL MEDICINE,

IN THE

UNIVERSITY OF THE STATE OF NEW YORK,

THIS WORK

IS MOST RESPECTFULLY DEDICATED,

IN TESTIMONY OF THE VERY GREAT ESTEEM

AND REGARD OF

THE AUTHOR.

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PREFACE.

THE reception which this work has met with from every branch of the medical Profession, and indeed from the public at large, merits my most grateful acknowledgments; and as the best way of expressing them, I have endeavoured to render it still more useful by collecting from every valuable source whatever was likely to prove serviceable, and thereby enable it to maintain its claim to a continuance of that approbation with which the seven former editions have been so eminently distinguished. The eighth is now laid before them; and it will be found to contain such an addition of important matter, as I trust will keep the spirit of the work on a level with the improvements which are annually taking place in the science of medicine.

The doctrines and observations contained in it are grounded on a practice of fifty years in different climates, after a study of several years at the Edinburgh University during the zenith of its reputation, and when it numbered the elder Dr. Munro, Dr. Cullen, Dr. Black, and Dr. Gregory, among its professors; assisted by an attentive perusal of the works of all modern writers of eminence, and notes carefully taken of any particular cases which have fallen under my own care.

As in the former editions, the diseases are divided into the following classes, viz. Pyrexiaë, or Febrile Diseases; Neuroses, or Nervous Diseases; Cachexiaë, or Diseases connected with a general bad Habit of Body; Locales,

or Diseases only affecting Parts; those not referrible to any particular class; the Diseases of the Pregnant and Parturient States, and those of Infancy: and although this arrangement is by no means perfect or unobjectionable, (indeed all the systems of nosology yet published have important defects, and are imperfect,) still it may be sufficient to answer every useful purpose.

The necessity of studying nosology and teaching medicine upon a nosological plan, has indeed been objected to by some Professional men; but this can only have arisen from an imperfect acquaintance with its nature and tendency, and a consequent inadequate estimate of its utility. It is necessary, in my opinion, that every Practitioner should be enabled to distinguish diseases by their symptoms or signs, if he would hope to cure them by appropriate remedies. He must therefore possess in his mind an arrangement of the characteristic symptoms of every disease, and especially of those by which one disease may be distinguished from other diseases which resemble it, or with which it has several symptoms in common.

The new nomenclature, in conformity to the Pharmacopœia of the London College of Physicians lately published, has been adopted throughout the different prescriptions, and a table of the synonyms of the different colleges of London, Edinburgh, and Dublin, has been annexed, which cannot but be considered as a valuable addition to the work.

To be able to arrest the progress of contagious diseases, must be a very desirable object; and therefore those means which have been found most effectual not only for this purpose, but for totally annihilating every kind of contagion, have been pointed out under the several heads of the different species of Typhus, Scarlatina, Cynanche Maligna, Variola, Pestis, and Dysen-

teria. The best means for preserving the health of Europeans in warm climates, and of sailors on shipboard, have also been noticed; and as both cold and warm bathing, as well as many mineral waters, may be regarded as useful auxiliaries in the cure of some disorders, their different qualities and virtues have been specified.

Such is the nature of this work; and I trust it will be found a tolerably accurate compendium of the present state of medical practice, from which the young Practitioner may derive both information and instruction, while it may also prove a serviceable reference occasionally to those of longer standing in the Profession. In cases of emergency, it may likewise serve as a guide to other persons, who on any sudden or violent attack of illness, either in their own families, or those of the neighbouring poor, might find it necessary to administer some appropriate remedy in the interval of their obtaining professional assistance.

About two years ago, I submitted to the public a work on Domestic Medicine, wholly divested of all professional terms, and chiefly intended for the use of families, managers of plantations and factories in our colonies abroad, and masters of ships not having any medical Practitioner on board, which I trust will prove of as high utility to those for whom it is designed, as the present work has done to those engaged in the practice of medicine.

Besides giving the treatment of the diseases incidental in both cold and warm climates to men, women, and children, it points out the steps to be adopted for preventing the further extension of such as are of a contagious nature, as also the means for preserving health, and prolonging human life to an advanced age. Since the appearance of this Publication it has been noticed

by several of the Reviewers, and has been pretty generally admitted by them, to be the best work on Domestic Medicine yet submitted to popular readers.

I think it necessary to state, that the doses advised in the various prescriptions of the present work are intended for adults, except where particularly specified for infants or children; and that, in general, women require a smaller quantity of medicine to produce a desired effect than men, and those of a sanguine temperament, less than those of the melancholic. In regulating the doses, due consideration ought therefore to be paid to the sex, temperament, habit, idiosyncrasy, and disease of the patient, as no correct general rule can be laid down.

It would be ungrateful in me not to express my warmest acknowledgments to Dr. Hosack of New York, for his exertions to extend the usefulness of the Modern Practice of Physic, not only by recommending it to his pupils as professor of the Theory and Practice of Physic and Clinical Medicine in the University of that state; but by the many valuable observations in the appendix which he has added to the different editions, seven in number, that have been published under his sanction, and which have rendered the work more complete, and better adapted to the climate and constitution of the inhabitants of the different States of North America.

It is incumbent on me to return my best thanks to Dr. Goven, late of the Lunatic Asylum of Charenton in France, for the honour done me by his translation of this work into the French language, the knowledge of which I obtained through the medium of Letters from the Continent during a Tour through France in 1818, published in the Gentleman's Magazine for July 1820.

ROBERT THOMAS.

Salisbury, January 12, 1825.

A SYSTEMATIC ARRANGEMENT

OF

THE DISEASES

INTO

CLASSES AND ORDERS;

TOGETHER WITH

AN EXPLANATION AND DERIVATION OF THEIR NAMES.

CLASS I.

PYREXIÆ (FEBRILE DISEASES) from πυρ, fire, and εἶς, habit.

ORDER I.

FEBRES or FEVERS, from *ferbeo*, to be hot.

Febris Intermittens (*Intermittent Fever*.)

Febris Remittens (*Remittent Fever*.)

Synochus (*Simple Continued Fever*), from συνεχω, to continue.

Synocha (*Inflammatory Fever*), from ditto.

Typhus Mitior (*Low or Nervous Fever*), from τυφος, stupor. By some it is supposed to be derived from τυφω, to inflame.

—— Gravior (*Malignant or Putrid Fever*), from ditto.

—— Icterodes (*Yellow Fever*), from τυφος, and ικτερος, icterus.

ORDER II.

PHLEGMASIE (*Inflammations*), from φλεγω, to burn.

Phlegmon (*Phlegmonous Inflammation*).

Erysipelas (*Erysipelatous ditto*), from ερσω, to draw, and πελας, adjoining; named from the neighbouring parts being affected by the eruption.

Phrenitis (*Inflammation of the Brain and its Membranes*), from φρενιτις, a frenzy or distraction.

Ophthalmia (*Ditto of the Eye*), from οφθαλμος, the eye.

Otitis (—— Ear), from ος, the ear.

Cynanche Tonsillaris (*Inflammatory Sore Throat*), from κυων, a dog, and ανχω, to suffocate.

—— Parotidæa (*Mumps*).

—— Maligna (*Putrid or Ulcerated Throat*).

—— Trachealis (*Croup*).

—— Pharyngæa (*Inflammation of the Pharynx*).

—— Laryngæa (—— Larynx).

Pleuritis (*Pleurisy*), from πλευρα, the membrane which lines the lungs.

Pneumonia (*Peripneumony*), from πνευμων, the lungs.

—— Notha (*Spurious Peripneumony*).

Gastritis (*Inflammation of the Stomach*), from γαστηρ, the stomach.

Enteritis (—— Intestines), from εντερον, an intestine

Hepatitis (—— Liver), from ηπαρ, the liver.

Splenitis (—— Spleen), from σπλην, the spleen.

Nephritis (—— Kidney), from νεφρος, the kidney.

Cystitis (—— Bladder), from κυστις, a bag or bladder.

Podagra (*Gout*), from *πῦς*, the foot, and *αγρεῖν*, a seizure.

Rheumatismus (*Rheumatism*), from *ῥευματίζω*, to be afflicted with fluxions.

ORDER III.

EXANTHEMATA (*Eruptive Fevers*), from *εξανθεῖν*, to effloresce.

Variola (the *Small-pox*), from *varius*, changing colour, and the skin being disfigured.

Variolæ Vaccinæ (*Cow-pox*).

Varicella (*Chicken-pox*), the word being a diminutive of *varia*.

Rubeola (the *Measles*), from *rubeo*, to become red.

Scarlatina (*Scarlet Fever*), from *scarlato* (Ital.) a lively red.

Pestis (*Plague*).

Miliaris (*Miliary Fever*), from *milium*, the millet.

Pemphigus (*Vesicular Eruption*), from *πυμφίξ*, a pustule.

Urticaria (*Nettle Rash*), from *urtica*, a nettle.

ORDER IV.

HEMORRHAGIÆ (*Involuntary Discharges of Blood*), from *αιμορραγέω*, to throw out blood, from *αἷμα*, blood, and *ῥέω*, to flow.

Epistaxis (*Hemorrhage from the Nose*), from *ἐπιστάζω*, to distil.

Hæmoptysis (*Spitting of Blood*), from *αἷμα*, blood, and *πτύω*, to spit.

Hæmatemesis (*Vomiting of Blood*), from *αἷμα*, blood, and *εμέω*, to vomit.

Hæmaturia (*Bloody Urine*), from *αἷμα*, blood, and *ἔρον*, urine.

Menorrhagia (*Immoderate flow of the Menses*), from *μήνη*, the menses, and *ῥήγνυμι*, to break out.

Hæmorrhoids (*Piles*), from *αἷμα*, blood, and *ῥέω*, to flow.

ORDER V.

PROFLUVIA (*Fluxes with Pyrexia*), from *profluo*, to run down.

Catarrhus (*Catarrh*), from *καταρρέω*, to flow down.

Dysenteria (*Dysentery*), from *δύς*, bad, *ἐντερον*, the intestine, and *ῥέω*, to flow.

CLASS II.

NEUROSES (NERVOUS DISEASES), from *νεῦρον*, a nerve.

ORDER I.

COMATA (*Soporose Diseases*), from *κωμα*, a propensity to sleep.

Apoplexia (*Apoplexy*), from *ἀπο* and *πλησσω*, to strike down.

Paralysis (*Palsy*), from *παράλυω*, to loose.

ORDER II.

ADYNAMIÆ (*Defect of Vital Powers*), from *α*, privative, and *δυναμις*, power.

Syncope (*Fainting*), from *συν*, with, and *κοπτω*, to strike down.

Vertigo (*Giddiness*).

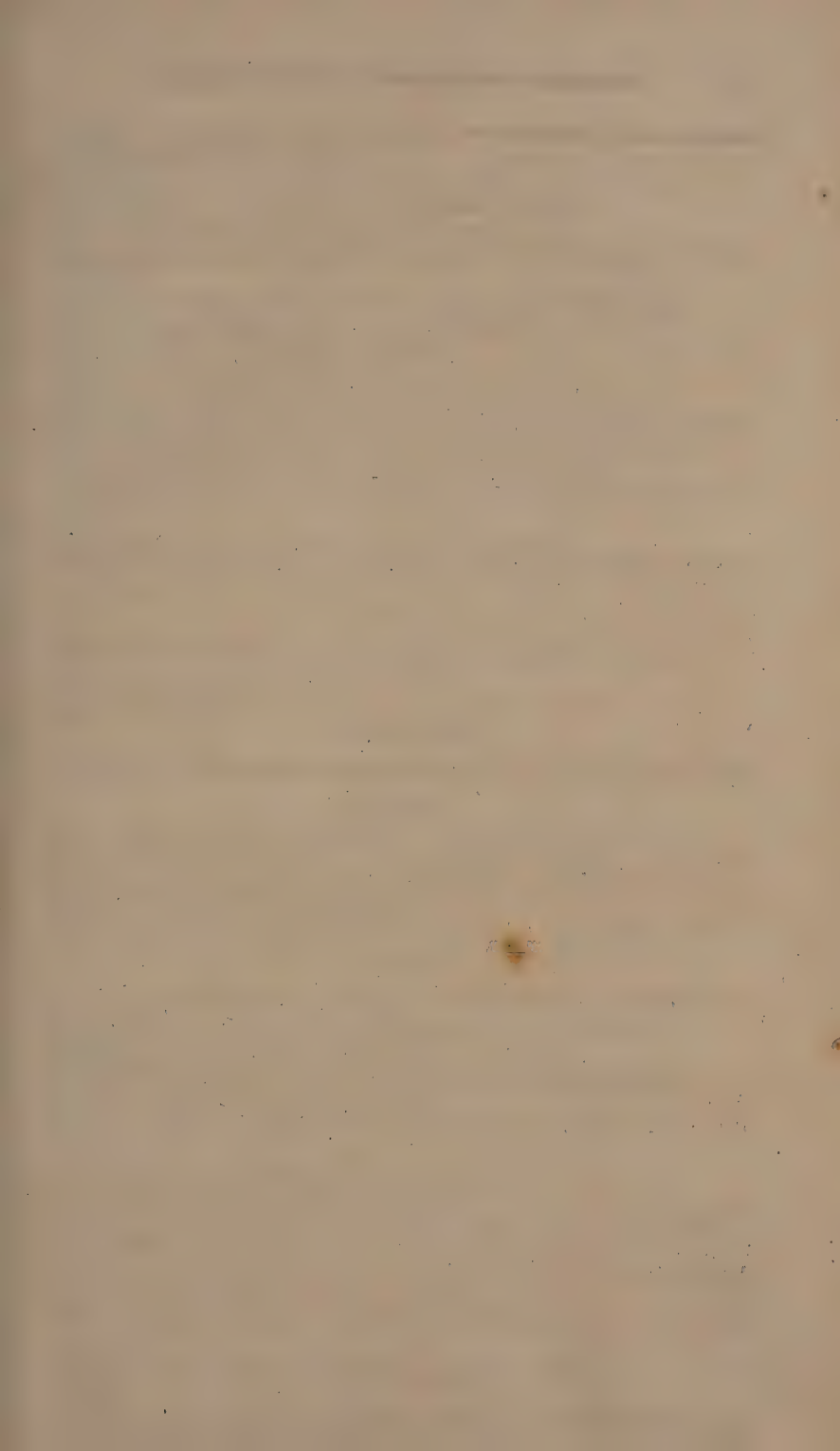
Dyspepsia (*Indigestion*), from *δύς*, bad, and *πεπτω*, to concoct.

Hypochondriasis (*Hypochondriac Affections*), from *υποχονδριακος*, one who is hipped.

ORDER III.

SPASMI (*Spasmodic Diseases*), from *σπᾶω*, to draw.

Hysteria (*Hysteric Diseases*), from *ὑστέρα*, the womb.



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Epilepsia (Epilepsy), from ἐπιλαμβάνω, to seize upon, so named from the suddenness of its attack.

Chorea Sancti Viti (St. Vitus's Dance), from χορεία, a dance.

Risus Sardonius (Sardonic, or Convulsive Laughter).

Tetanus (Cramp), from τένω, to stretch.

Singultus (Hiccup, or Convulsive Motion of the Diaphragm and Stomach).

Pertussis (Hooping Cough), from per, much, and tussis, cough.

Pyrosis (Water Brash), from πυρωσις, a burning.

Angina Pectoris, vel Syncope Anginosa.

Palpitatio (Palpitation of the Heart).

Asthma (Asthma), from ασθμαζω, to breathe with difficulty.

Hydrophobia (Canine Madness), from ὕδωρ, water, and φοβέω, to dread.

Colica (Colic), from κώλον, the colon, one of the large intestines.

Colica Pictorum (Dry Belly Ache, or Devonshire Colic).

Cholera Morbus (Vomiting and Purging), from χολή, bile, and ῥέω, to flow.

Diarrhœa (Purging), from διαρρέω, to flow through.

Diabetes (Excessive Discharge of Urine), from δια, through, and βαίνω, to pass.

ORDER IV.

VESANIÆ (Mental Diseases), from vesania, madness.

Mania (Madness), from μανίμαι, to rage.

Incubus (Night-mare).

CLASS III.

CACHEXIÆ (Cachectic Diseases), from κακος, bad, and ἐξίς, a habit.

ORDER I.

MARCORES (Universal Emaciation), from marceo, to become thin.

Atrophia (Atrophy), from α, priv. and τροφή, nutrition.

Phthisis (Pulmonary Consumption), from φθίω, to consume or waste.

Cachexia Africana (Negro Cachexy).

Aphtha Chronica (Chronic Thrush), from απτω, to inflame.

ORDER II.

INTUMESCENTIÆ (General Swellings), from intumesco, to swell.

Polysarchia (Corpulency), from πολυς, much, and σαρξ, flesh.

Emphysema (Emphysema), from εμφυσάω, to inflate.

Tympanites (Tympany), from τυμπανίζω, to sound like a drum.

Hydrops (Dropsy), from ὕδωρ, water.

Anasarca (Dropsy of the Cellular Membrane), from ἀνα, along, and σαρξ, flesh.

Ascites (Dropsy of the Belly), from ασκος, a sack.

—— *Ovarii (Dropsy of the Ovarium)*.

Hydatids (Water contained in Membraneous Bags), from ὕδατις, a bladder.

Hydrocele (Dropsy of the Tunica Vaginalis Testis), from ὕδωρ, water, and, κήλη, a swelling.

Hydrocephalus Dropsy in the Head, from ὕδωρ, water, and κεφαλή, the head.

Hydro-thorax (Dropsy of the Chest), from ὕδωρ, water, and θώραξ, the chest.

Rachitis (Rickets), from ραχίς, the spine of the back, which is very frequently affected in this disease.

ORDER III.

IMPETIGINES (*Cutaneous Diseases*), from *in*, and *petigo*, a scab.
 Scrofula (*Scrofula*, or *King's Evil*), from *scrofula*, a swine, because this animal is said to be subject to a similar disorder.
 Mesenterii Glandulæ Morbosæ (*Diseased Mesenteric Glands*).
 Syphilis (*Venereal Disease*), from σιφλος, filthy.
 Sibbens, or Sivvens.
 Frambœsia (*Yaws*), from *framboise*, the French for a raspberry.
 Elephantiasis (*Leg swelled like an Elephant's*), from ελεφας, an elephant.
 Lepra (*Leprosy*), from λεπις, a scale.
 Plica Polonica (*Plaited Hair*), from *plico*, to entangle.
 Scorbutus (*Scurvy*), from *shorbact* (Germ.), scurvy.
 Icterus (*Jaundice*), from ικτερος, the jaundice.

CLASS IV.

LOCALES (*Local Diseases*), from *locus*, a place

ORDER I.

DYSÆSTHESIÆ (*Diseases of the Senses*), from δυσ, bad, and αισθησις, feeling.
 Nyctalopia (*Night Blindness*), from νυξ, the night, and ωψ, an eye.
 Amaurosis, or Gutta Serena, from αμαυρωσις, obscurity.
 Paracusis (*Deafness*), from παρα, wrong, and ακουω, to hear.

ORDER II.

Increased Appetite.

DYSOREXIÆ (*Depraved Appetites*), from δυσ, bad, and ορεξις, appetite.
 Bulimia (*Canine Appetite*), from βης, an ox, and λιμος, hunger.
 Furor Uterinus, or Nymphomania (*Uncontrollable desire of Venery in Women*), from νυμφα, a nymph, and μανια, madness.

Defective Appetite.

Anorexia (*Loss of Appetite*), from α, priv. and ορεξις, appetite.
 Anaphrodisia (*Impotence*), from α, priv. and Φρωδισια, venery.

ORDER III.

DYSCINESIÆ (*Motion impeded or depraved from an Imperfection of the Organ*), from δυσ, bad, and κινew, to move.
 Strabismus (*Squinting*), from στραβιζω, to squint.

ORDER IV.

APOCENOSES (*Increased Discharges*), from απο and κενωω, to evacuate.
 Ephidrosis (*Violent and Morbid Perspiration*), from εφιδρωω, to perspire.
 Eneuresis (*Incontinence of Urine*), from ενερεω, to be unable to retain urine.
 Gonorrhœa Dormientium (*Involuntary Emission of Semen during Sleep*), from γονη, semen, and ρεω, to flow.
 Leucorrhœa (*Whites*), from λευκος, white, and ρεω, to flow.

ORDER V.

EPISCHESES (*Obstructions*), from επισχσεις, a suppression or retention.
 Obstipatio (*Constipation or Costiveness*), from *obstipo*, to stop up.
 Ischuria (*Suppression of Urine*), ισχω, to restrain, ερον, the urine.

- Dysuria (*Difficulty of voiding Urine*), from δυσ, difficulty, and ορον, the urine.
- Amenorrhœa (*Partial or total Obstruction of the Menses from other Causes than Pregnancy*), from α, priv. μην, month, and ρεω, to flow.
- Chlorosis (*Retention of the Menses, or Green Sickness*), from χλωρίζω, to look green.
- Mensium Suppressio (*Suppressed Menses*).
- Menorrhagia Difficilis (*Difficult and painful Menstruation*), from μην, a month, and γηγυμι, to break out.

ORDER VI.

- TUMORES (*Tumours*), from tumeo, to swell.
- Carcinoma (*Cancer*), so named from the tumours exhibiting blue veins like crabs' claws.
- Fungus Hæmatodes (*Medullary Sarcoma*), from σφογγος, a sponge, and αιμα, blood.
- Bronchocele (*Derbyshire Neck*), from βρονχος, the windpipe, and κηλη, a tumour.
- Dracunculus (*Guinea Worm*).

ORDER VII.

- DOLOROSI (*Painful Affections, unaccompanied by Pyrexia*).
- Cephalalgia (*Headach*), from κεφαλη, the head, and αλγος, pain.
- Odontalgia (*Toothach*), from οδεις, a tooth, and αλγος, pain.
- Faciei Morbus Nervorum Crucians (*Tic Douloureux, or Painful Affection of the Nerves of the Face*).
- Gastrodynia (*Pain in the Stomach*), from γαστηρ, the stomach, and οδυνη, pain.
- Luxatio (*Sprain*), from luxo, to loosen or displace.
- Calculus (*Stone in the Bladder and Gravel*).

ORDER VIII.

- DIALYSES (*Solutions, or Discontinuity of Parts*), from διαλυω, to dissolve.
- Ulcus (*Ulcer*), from ελχος, a sore.
- Vulnus ex Ustione factum (*Scalds and Burns*), from vulnus, a wound.
- Herpes (*Tetters*), from ιρπω, to creep.
- Tinea Capitis (*Scald Head*), from teneo, to hold.
- Psora (*Itch*), from ψωρα, the itch.
- Impetigo (*Ring-worm*), from impeto, to infest.
- Acne (*Blotched and pimpled Face*), from αχνη, chaff.
- Chigre (*an Insect resembling a Flea*).
- Pernio (*Chilblain*).

DISEASES NOT REFERRIBLE TO ANY PARTICULAR CLASS

- VERMES (*Worms*).
- Venena (*Poisons*).
- Animatio Suspensa (*Suspended Animation*).
- Gelatus (*Frost-bitten*).

DISEASES OF THE PREGNANT STATE.

- CONVULSIONES (*Convulsions*), from convello, to rend.
- Abortio (*Abortions and Floodings*), from aborior, to be sterile.

DISEASES OF THE PUERPERAL STATE.

LOCHIA (*Discharge after Labour*), from λοχευω, to bring forth.

Febris Lactea (*Milk Fever*).

Inflammatiō Mammæ (*Tumour and Inflammation of the Breast*).

Papillæ Excoriatæ (*Excoriated Nipples*).

Eruptiones Miliarie (Miliary Eruptions).

Phlegmasia Dolens (*Painful Intumescence of the lower Extremity*), from φλεγω, to burn.

Hysteritis (*Inflammation of the Womb*), from ὑστερα, the womb.

Peritonitis (*Inflammation of the Peritonæum*), from περιτελυω, to stretch round.

Febris Puerperarum (*Puerperal or Child-bed Fever*).

Inversio Uteri.

Prolapsus Uteri.

DISEASES OF INFANTS.

ASPHYXIA (*Apparent Cessation of Life*), from α, priv. and σφυξι, the pulse.

Infantum Color Lividus (*Black and livid Colour of new-born Children*).

Meconii Retentio (*Retention of the Meconium*).

Icterus Infantum (*Yellow Gum*).

Excoriationes et Ulcerationes (*Excoriations and Ulcerations*).

Singultus (*Hiccups*).

Erysipelas Infantile (*Infantile Erysipelas*).

Eruptiones (*Eruptions*).

Tormina (*Gripes from Acidities and Flatulency*).

Vomitus (*Vomiting*).

Diarrhœa (*Purging*).

Trismus (*Locked Jaw*).

Febris Remittens (*Remittent Fever*).

Aphthæ (*Thrush*).

Prolapsus Ani (*Falling of the Fundament*).

Atrophia Ablactatorium (*Weaning Brash*).

Ophthalmia Purulenta (*Purulent Inflammation of the Eyes*).

Dentitio (*Teething*).

Convulsiones.

Syphilis.

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A TABLE

OF

THE WEIGHTS AND MEASURES

USED BY APOTHECARIES.

Weights.

| | | | | |
|---------------------|-----|------------|---|-----------------|
| The Pound | ℔ | } Contains | { | Twelve Ounces. |
| — Ounce | ℥ | | | Eight Drachms. |
| — Drachm | ʒ | | | Three Scruples. |
| — Scruple | ʒ | | | Twenty Grains. |
| — Grain | gr. | | | |

These, and the Signs by which they are denoted, are the same in all the British Pharmacopœiæ.

Measure of Fluids.

| | | | | |
|--------------------------|-------|------------|---|-----------------------|
| The Gallon | Cong. | } Contains | { | Eight Pints. |
| — Pint (Octarius) . . . | O. | | | Sixteen fluid Ounces. |
| — Fluid Ounce | ℥ | | | Eight fluid Drachms. |
| — Fluid Drachm | ʒ | | | Sixty Minims. |
| — Minim | ℥ | | | |

The value of these Measures is the same in all the Pharmacopœiæ, but the signs by which they are denoted are peculiar to the London. The Edinburgh and Dublin retain the old signs, which are, for the gallon, cong.; the pint, ℔.; the ounce, ℥; the drachm, ʒ; and the drop, gt.

On account of the uncertainty of the dose of any medicine of a liquid nature, when regulated by the dropping of it from a bottle, (much depending on the size of the phial, as likewise on the quality of the fluid contained in it,) the Physicians of the London College have directed, in their Pharmacopœia, the minim to be substituted for the drop. The minim and gutta of any aqueous fluid proceeding from the mouth of the graduated measure, may be considered, indeed, as nearly equal; but with respect to vinous and spirituous tinctures, there will be a considerable difference, as ten minims of either of these will at least amount to fifteen or sixteen drops. In administering active medicines, such, for instance, as the tinctura opii and the like, the difference between the minim and gutta is of high importance, and should be attended to.

The signs of the London Pharmacopœia have been adopted in the different Latin formulæ throughout this work; but in the translated copies, for the convenience of those who are not of the Profession, and who may not possess the graduated measure, the drop has been substituted for the minim, attention having been paid at the same time to their relative proportions.

THE NATIONAL ANTHROPOLOGICAL ARCHIVES

Smithsonian Institution

Washington, D. C.

1900

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PRACTICE OF PHYSIC.

CLASS I.

PYREXIÆ, OR FEBRILE DISEASES.

THE character assigned to this class of diseases is, increased heat and frequency of the pulse, after a shivering, accompanied with a disturbance in many of the functions, and diminution of strength, especially in the limbs.

ORDER I.

FEBRES, OR FEVERS.

It is impossible to give a concise and proper definition of the disease known by the name of fever, as it has no symptom invariably attendant on it, which can point out its real nature or essence. The pulse is exceedingly various in such cases: it may be small, weak, slow, contracted, and unequal; or it may be strong, quick, full, and regular; hard or soft, according as the fever is at the commencement, increase, height, or in the remission and termination; or as the genus and nature of the fever may chance to differ. So, also, the heat may be equally diffused, or confined to particular parts: sometimes the external parts are cold, with a sense of internal heat; at others, there is general heat or cold over the body; and sometimes the heat is not greater than what is natural. Sometimes the face is pale, and at others it is red or swelled; now it has the natural look, and now the reverse of this. The eyes are heavy, languid, and sad; or red, and impatient of light; they are prominent, distorted, or wild; shining, dull, or ghastly; sometimes bedewed with tears, and deprived of their usual lustre. The tongue is generally dry, chapped, scabrous, red, white, or variegated; often covered with mucus; but not unfrequently moist and natural, without any thirst. The breathing is frequent, hot, unequal, or impeded; the breath is often offensive. The appetite is usually extinct; but, in a few instances, some desire for food remains. Sometimes the urine is crude and watery; at others, red and thin; or often thick, soon becoming turbid, and depositing a sediment; sometimes it is of a natural appearance. To these symptoms are added, pains in different parts of the body; depression of strength, and watchfulness; or, on the other hand, heaviness, stupor, or imbecility of mind,

delirium, diarrhœa, or constipation, vomiting, tension of the hypochondria, subsultus tendinum, emaciation, and other affections arising with the fever itself, or gradually supervening to it.

Besides the ordinary febrile symptoms of hot skin, irritated circulation, foulness of the tongue, thirst, and deficient or irregular secretions, preceded by lassitude, heaviness, listlessness and rigors, there are pains in the head, generally of the throbbing kind, and extending along the continuation of that portion of the brain which is lodged in the channel of the spine; increased heat of the head (easily perceived on compressing it with the hands), even though the body and extremities be cold; unusual throbbing of the arteries in the temples and neck; suffusion of the eyes, and an altered expression of features, easily observed, but difficult to be described, together with disturbance of all the functions immediately belonging to the brain. If to these be added irregularity in regard to sleep, and watching, which, though common to many diseases, belongs, in a peculiar manner, to the one under our investigation, we shall have characters always sufficient to enable us to detect the presence of fever in the system, and affording at the same time the clearest indications of its nature.

It is only from a diligent examination of these appearances conjoined together, that we are enabled to judge of the presence or absence of fever; not from any of them taken singly. By making a general assemblage of the symptoms, we may venture to call it a disease which affects the whole system, the head, trunk of the body, and extremities; the skin, muscular fibres, and membranes; the circulation, absorption, and nervous system, the body, and likewise the mind. It does not, however, affect the various parts of the system uniformly and equally; but, on the contrary, one part is much more affected than another*.

Fevers are usually divided into intermittents, remittents, and continued, on account of their taking up different times in their natural duration; some being compounded of a number of paroxysms, following each other in a regular succession, at a certain distance of time, as happens in intermittents; in others, a fresh paroxysm comes on, immediately on the crisis of the former, so as hardly to leave the patient entirely free of fever, as happens in remittents; and in others, there is such a quick succession of paroxysms, that the one comes on before there is any visible abatement of the febrile symptoms, as in continued fevers.

In some instances of the last-mentioned fever, the remissions and exacerbations are so inconsiderable, as not easily to be perceived, which has induced a few practitioners to conclude, that there is a species of fever which subsists for several days together, and which is composed only of a single paroxysm: but we may safely presume, that no such fever ever existed; on the contrary,

* See Dissertation on Fever, by Dr. George Fordyce.

we may be well assured, that every continued fever consists of a repetition of paroxysms, in the manner just mentioned.

Now and then we meet with a fever consisting of only a single paroxysm, and which goes through its course in a few hours, as in the *ephemera simplex*; but this does not very frequently occur.

Continued fevers usually last nearly of the same violence for several days, there being commonly an exacerbation in the evening, and a remission towards morning. The fevers of this species have been noticed to be of great diversity, by ancient nosologists; but modern ones have limited them, very properly, either as they shew an inflammatory irritation, or as they point out an affection of the nervous system, and in which the powers of sense and motion are particularly impaired. The distinctions of inflammatory and nervous fevers are, therefore, those now generally made use of; the former being known by the title of *synocha*, and the latter by that of *typhus*. A combination of these two genera seems, however, to be that form of continued fever which is most prevalent in this climate; and this I shall treat of under the appellation of simple continued fever, or *synochus*.

A variety of continued fever has been noticed by some physicians under the title of *synochus biliosa*, where, in addition to the other febrile symptoms, we meet with a redundant secretion and vitiated state of the bile, giving rise to a vomiting of dark green matter, or diarrhœa, and excited by an exposure to extreme heat of weather. In some cases, however, the bowels are very torpid, and the motions procured even by purgatives are of a hard consistence, and dark as pitch; but as this variety of fever seldom appears under a continued type, and rather assumes a remittent form, it ought, undoubtedly, to be considered as a remittent.

Several species are comprehended under the head of *typhus*: they do not, however, imply any specific difference, but seem to arise either from a different degree of power in the cause; from different circumstances of the climate or season in which they happen; from some peculiarity in the constitution of the person affected; or from a peculiar state of the fluids predisposing to putrescency.

As, hectic fever cannot be considered as an idiopathic disease, but merely as a symptom of some other, and of phthisis in particular, it is not noticed under a distinct head, but under that of pulmonary consumption.

FEBRES INTERMITTENTES, OR INTERMITTENT FEVERS.

THE title of intermittent is applied to that kind of fever which consists of a succession of paroxysms, between each of which there is a distinct and perfect intermission from febrile symptoms, or an apyrexial period.

Different names have been applied to this fever, according to the distance of time observed between the periods of its return. When

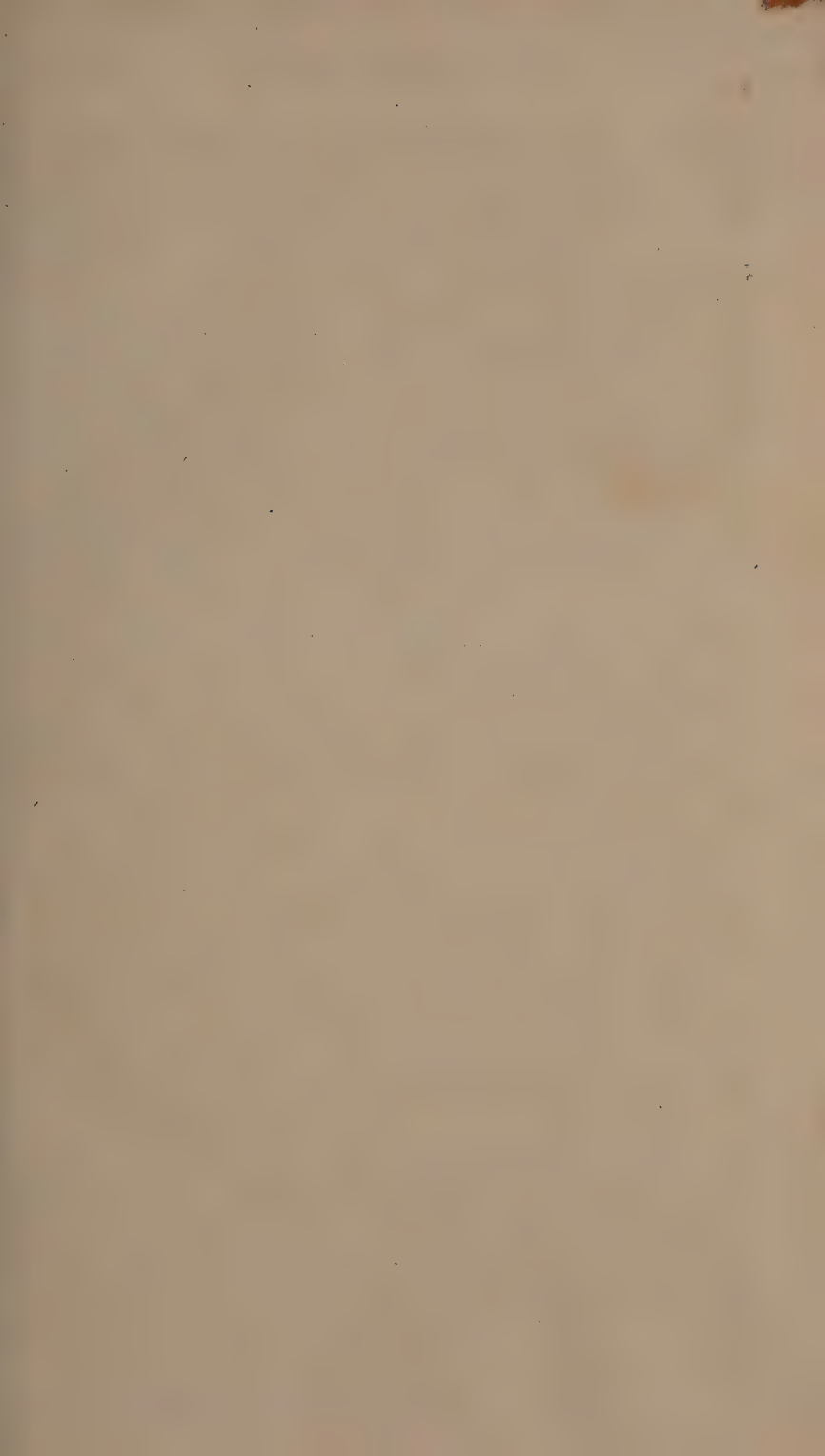
it comes on within the space of every twenty-four hours, it is called a quotidian; when it returns every other day, or there is a space of forty-eight hours between its attacks, it is called a tertian; and when it attends on the first and fourth day, with an interval of seventy-two hours, it is named a quartan. That under the tertian type is most apt to prevail in the spring, and is, indeed, the most frequent form of the disease. The quartan is the most obstinate and dangerous, being chiefly prevalent in autumn. The quotidian is more likely than the others to assume the continued type.

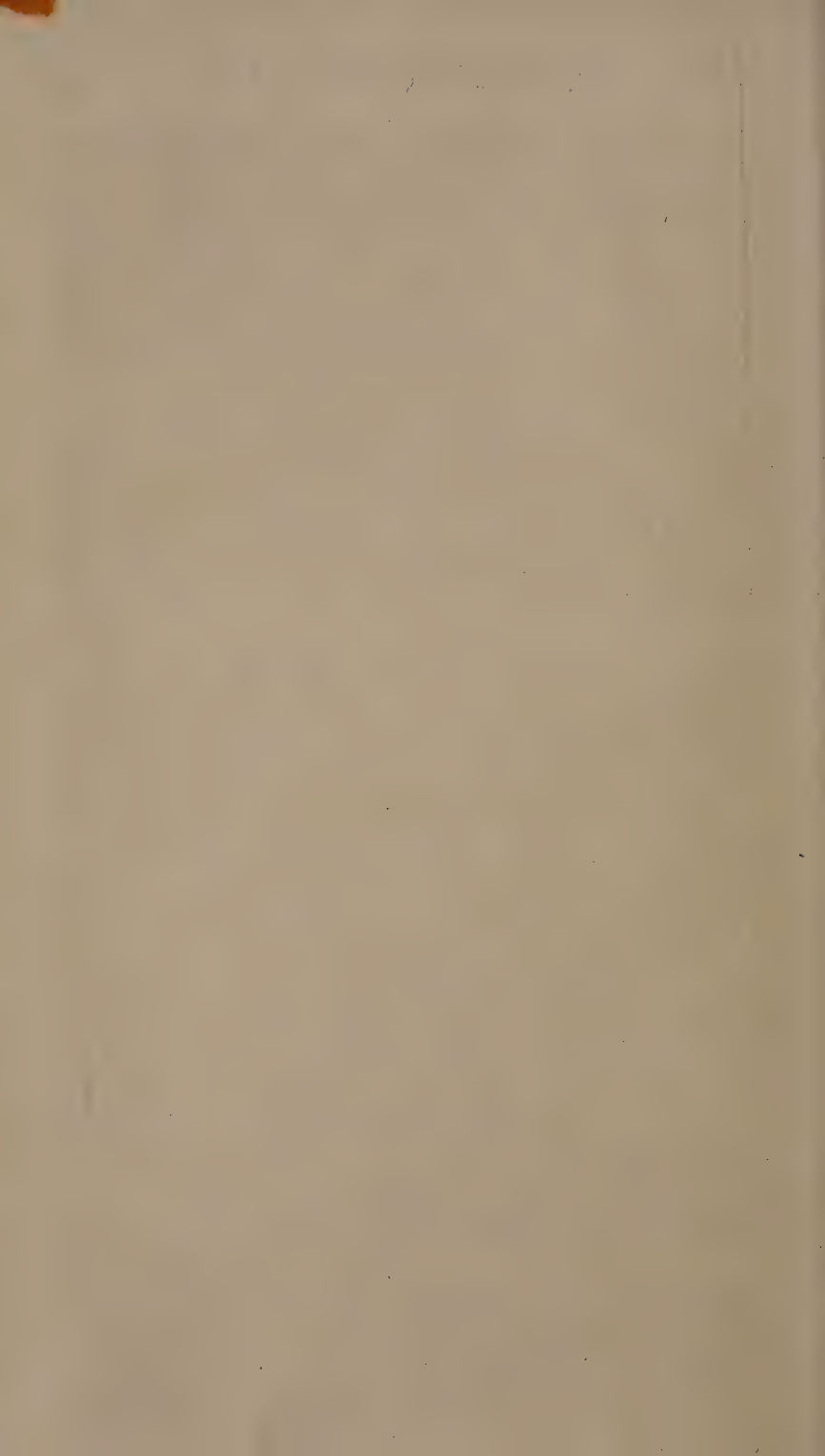
Of the quotidian, tertian, and quartan intermittents, there are several varieties and forms: as the double tertian, having a paroxysm every day with the alternate paroxysms similar to one another. The double tertian, with two paroxysms on one day, and another on the next. The double quartan, with two paroxysms on the first day, none on the second and third, and two again on the fourth day. The double quartan, with a paroxysm on the first day, another on the second, but none on the third. The triple quartan, with three paroxysms every fourth day. The triple quartan, with a paroxysm every day, every fourth paroxysm being similar.

When these fevers arise in the spring of the year, they are called vernal; and when in autumn, they are known by the name of autumnal. Intermittents often prove obstinate, and are of long duration, in warm climates; and they not unfrequently resist every mode of cure, so as to become very distressing to the patient, and often give rise to other chronic complaints, but more particularly anasarcaous swellings, and an enlargement of the liver, or spleen.

It seems to be pretty generally acknowledged, that marsh miasma, or the effluvia arising from stagnant water, or marshy ground, when acted upon by heat, are the most frequent exciting cause of this fever. In marshes the putrefaction of both vegetable and animal matter is always going forward, it is to be presumed; and hence it has been generally conjectured, that vegetable or animal putrefaction imparted a peculiar quality to the watery particles of the effluvia arising from thence. We are not yet acquainted with all the circumstances which are requisite to render marsh miasma productive of intermittents. According to the observations made in the fenny districts of this kingdom, it has been ascertained, that marsh miasma, when much diluted with aqueous exhalation, as in summers where an unusual quantity of rain has fallen, are nearly inert; but when arising from stagnant waters of a concentrated foulness, in consequence of great drought and heat in the latter end of summer and the early part of autumn, they act with great violence and malignancy.

In admitting the powers of marsh effluvia to produce intermittents, we ought not, at the same time, to look on them as their universal cause, since it is found that persons residing constantly in the most healthy part of cities, and far remote from marshes, are sometimes attacked by them.





The testimony of unquestionable writers, proves that febrific miasma may arise, under certain conditions, from almost any soil; and what is still more extraordinary, that these febrific miasma may be wafted by currents of air * to a distance far exceeding what has been supposed or admitted upon this subject.

By some physicians, the heavenly bodies have been supposed to have a considerable influence on intermittent fevers, particularly in warm climates. Dr. Lind mentions, that eight seamen were seized with a return of their fevers exactly at the moment of the beginning of an eclipse; and others have cited cases where people have been seized with intermittents at the full and change of the moon. Many of these observations have, however, on a more particular scrutiny, been referred to the tides, which, in warm climates, sometimes rise to a prodigious height at the new and full moon, and leave a great extent of marshy ground, the exhalations from which produce the disease; and it has been found, that by removing to a proper distance from these, the disorder was prevented, although the influence of the moon remained the same.

People in warm climates usually take their exercise very early in the morning, but frequently in the evening, being prevented in the day by the excessive heat: the cool and damp air, to which they are thereby exposed, often produces fevers, which have absurdly been attributed to the influence of the moon. A similar explanation may be given of the influence which the winds are said to have on fevers. In some marshy countries they produce intermittents when they blow over the marshes, and cease to spread when the wind changes its direction.

A watery, poor diet, great fatigue, long watching, intemperance, grief, much anxiety, debility, exposure to cold, lying in damp rooms or beds, wearing damp linen, a warm, moist, or cold damp atmosphere, the suppression of some long-accustomed evacuation, the recession of eruptions and preceding disease, have been ranked among the exciting causes of intermittents; but it is more reasonable to suppose that these circumstances act only by inducing that state of the body which predisposes to these complaints. By some it has been imagined, that an intermittent fever may be communicated by contagion; but this supposition is by no means consistent with general observation.

One peculiarity in this fever is, its great susceptibility of a renewal from very slight causes, as from the prevalence of an easterly wind, or from the repetition of the original exciting cause. It would appear likewise, that a predisposition is left in the habit, which favours the recurrence of the complaint. In this circumstance, intermittents differ from most other fevers, as it is well known, that after a continued fever has once occurred, and been completely removed, the person so affected is by no means so

* See Report of the Epidemic Fever, in the years 1809—10—11, by the Committee of Physicians appointed by the Madras Government.

liable to a fresh attack of the disorder, as one in whom it had never taken place.

We have not yet attained a certain knowledge of the proximate cause of an intermittent fever; but a deranged state of the stomach and primæ viæ is that which is most generally ascribed.

Each paroxysm of an intermittent fever is divided into three different stages, which are called the cold, the hot, and the sweating stages, or fits.

The cold stage commences with languor, a sense of debility, and sluggishness in motion, frequent yawning, and stretching, and an aversion to food. The face and extremities become pale, the features shrink, the bulk of every external part is diminished, and the skin over the whole body appears constricted, as if cold had been applied to it. At length the patient feels very cold, and universal rigors come on; the respiration is small, frequent, and anxious; the urine is almost colourless; sensibility is greatly impaired; and the pulse is small, frequent, and often irregular. In a few instances, drowsiness and stupor have prevailed in so high a degree, as to resemble coma, or apoplexy; but this is by no means usual.

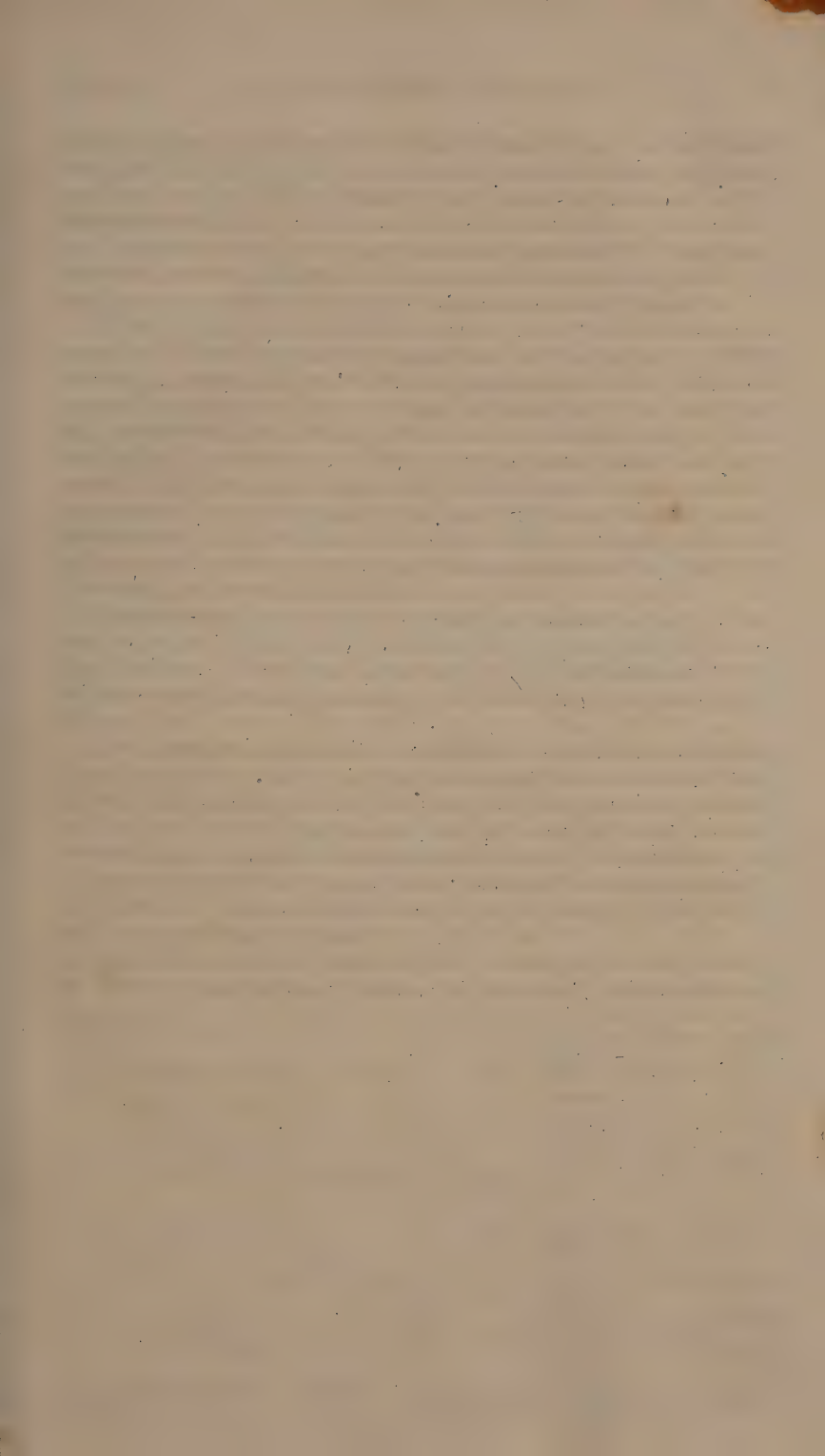
These symptoms abating after a short time, the second stage commences with an increase of heat over the whole body, redness of the face, dryness of the skin, thirst, pain in the head, throbbing in the temples, anxiety and restlessness; the respiration is fuller and more free, but still frequent; the tongue is furred, and the pulse has become regular, hard, and full. If the attack has been very severe, then, perhaps, delirium will arise.

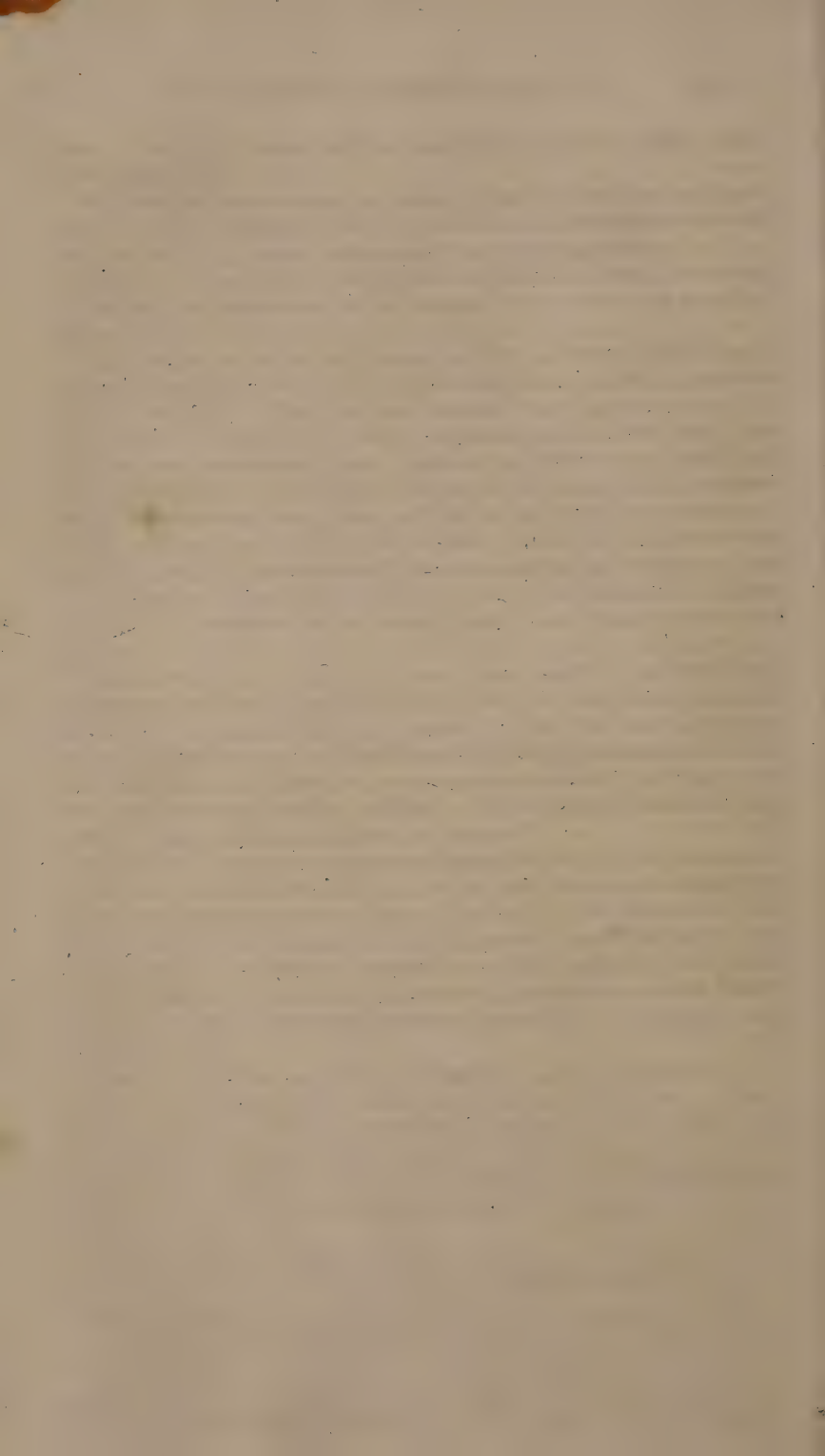
When these symptoms have continued for some time, a moisture breaks out on the forehead, and by degrees becomes a sweat, and this at length extends over the whole body. As this sweat continues to flow, the heat of the body abates, the thirst ceases, the urine deposits a sediment, respiration is free and full, and most of the functions are restored to their ordinary state: the patient is however, left in a weak and wearied condition. This constitutes the third stage.

Having pointed out the phenomena usually attendant on a paroxysm of intermittent fever, and likewise their mode of succession, it may not be unworthy of observation to notice, that in different cases they may prevail in different degrees; that the series of them may be more or less complete; and that the several stages, in the time they occupy, may be in different proportions to one another.

After a specific interval, according to the species of ague, a fresh paroxysm commences, in the manner above described.

Such a depression of strength has been known to take place on the attack of an intermittent fever, as to cut off the patient at once; but an occurrence of this kind is very uncommon. Patients are seldom destroyed in intermittents, from general inflammation, or from a fulness of the vessels, either of the brain, or of the thoracic





viscera, as happens sometimes in a continued fever; but when their duration is of any length, they are apt to induce other complaints, such as loss of appetite, flatulency, scirrhus of the liver and spleen, dropsical swellings, and general debility, which, in the end, now and then prove fatal. In warm climates particularly, intermittents are very apt to terminate in this manner, if not speedily removed; and in some cases they degenerate into continued fevers.

When the paroxysms are of short duration, regular in their recurrence, and leave the intervals quite free, we may expect a speedy recovery; but when they are long, violent, and attended with much anxiety and delirium, the event may be doubtful. Other unfavourable symptoms are, great prostration of strength, vertigo, foetid excretions, the presence of dysentery, cholera morbus, enlargements of the liver and spleen, inducing dropsy or jaundice, and convulsions occurring during the paroxysm preceded by coma. Relapses are very common to this fever, at the distance even of five or six months, or even a year; and autumnal intermittents are more difficult to remove than vernal ones.

Dissections of those who have died of an intermittent, shew a morbid state of many of the viscera of the thorax and abdomen; but the liver, and organs concerned in the formation of bile, as likewise the spleen and mesentery, are those which are usually most affected.

The indications of cure in the treatment of intermittents, are, first, to put as speedy a stop as possible to the fit, when it has taken place; and, secondly, during the intermission to prevent its return, at the usual or any after period, both by exciting a new action in the system, by administering certain remedies at the commencement or immediately before the accession of the cold fit, thereby destroying the morbid concatenation induced by the cause of the disease, and by invigorating the body.

To effect the first of these intentions, it is proper to have recourse to warm diluent liquids, cordial diaphoretics*, fomentations or

* 1. R Misturæ Camphoræ, f. 3xij.

Ammonia Subcarbon. gr. v.

Vini Antimon. Tart. ℥. x.

Syrup. Simpl. f. 3j. M.

ft. Haustus, tertius vel quartishoris sumendus.

Vel,

2. R Potassæ Subcarbon. ʒj.

Succi Limon. q. s. ad saturationem.

Aq. Cinnam. f. 3ij.

— Puræ, f. 3j.

Antimon. Tartarizat. gr. $\frac{1}{8}$.

Syrup. Cort. Aurant. f. 3j. M.

ft. Haustus.

* 1. Take Camphorated Mixture, twelve drachms.

Subcarbonate of Ammonia, five grains.

Wine of Tartarized Antimony, about fifteen drops.

Common Syrup, one drachm.

Mix them. One of these draughts is to be taken every three or four hours.

Or,

2. Take Subcarbonate of Potass, one scruple.

Lemon Juice, sufficient to saturate it.

Cinnamon Water, two drachms.

Pure Water, one ounce.

Tartarized Antimony, sixth of a grain.

Syrup of Orange Peel, one drachm.

Mix them for a draught.

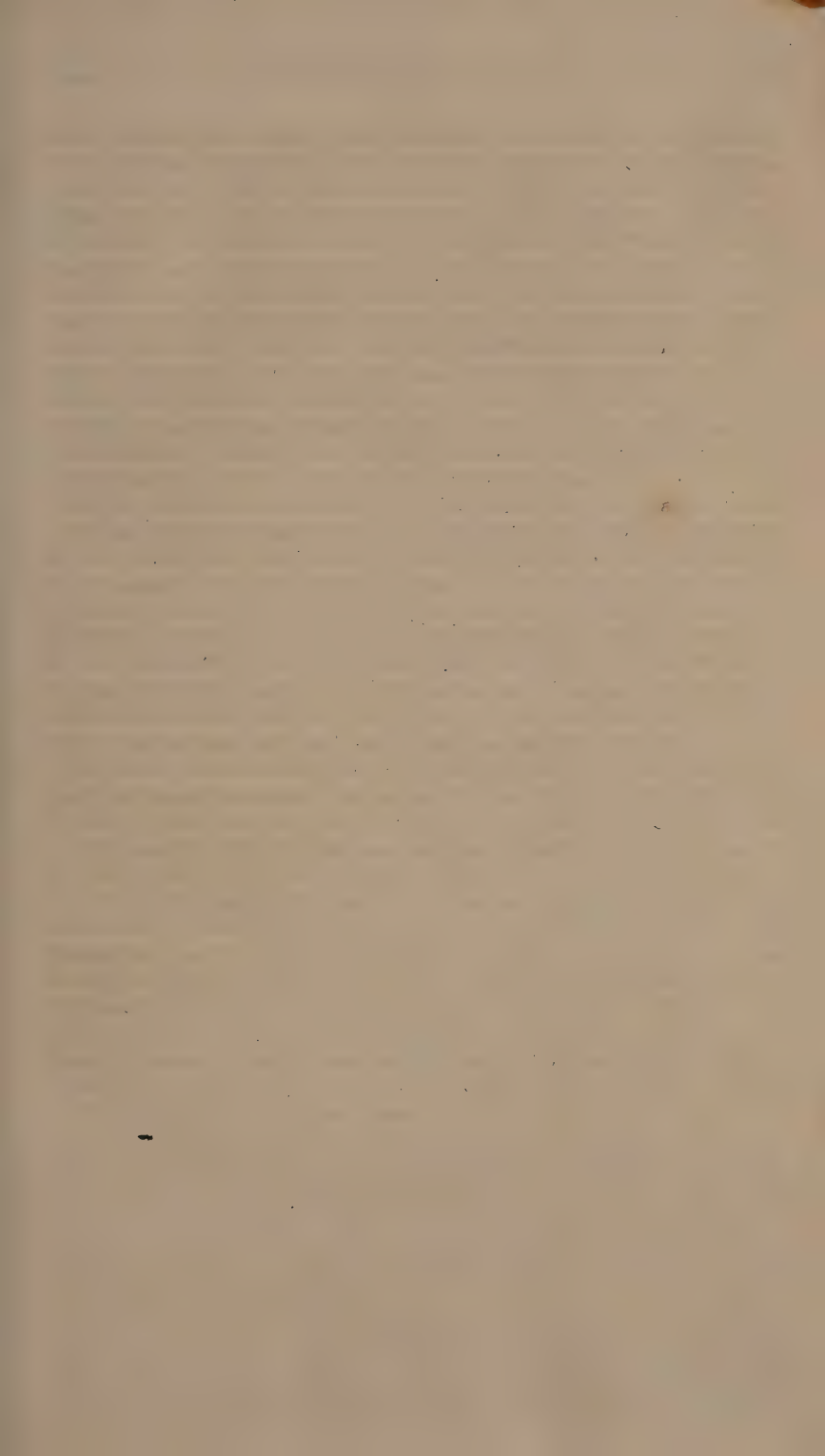
bottles filled with hot water to the feet, pediluvium, or the more general remedy of a vapour bath. By putting the patient into a bath of this nature a quarter of an hour before the usual time of the coming on of the fever, and keeping him in it until the period of the cold stage has elapsed, has, in some cases, been found to effect a complete cure, even when he had before taken the cinchona bark in large doses without any good effect. These several remedies often failing, however, to put a stop to the fit, has induced practitioners to search after more powerful and certain remedies.—Doctor Trotter mentions, in his *Medicina Nautica*, that finding intermittents became very frequent on board the *Vengeance*, one of the channel fleet, under Earl Howe, he was resolved to try the full effects of opium in preventing the fit. He reports, the moment the sick felt the approach of an attack, they were sure to run to the cockpit for relief. A dose of *tinctura opii* was then administered: if the first dose did not bring on some warmth in the space of ten or fifteen minutes, from twelve to twenty drops more were given. He never gave less than thirty drops the first time, and never had occasion to go beyond sixty in the space of an hour: for in no case did the remedy fail, we are informed, to give relief in this time.

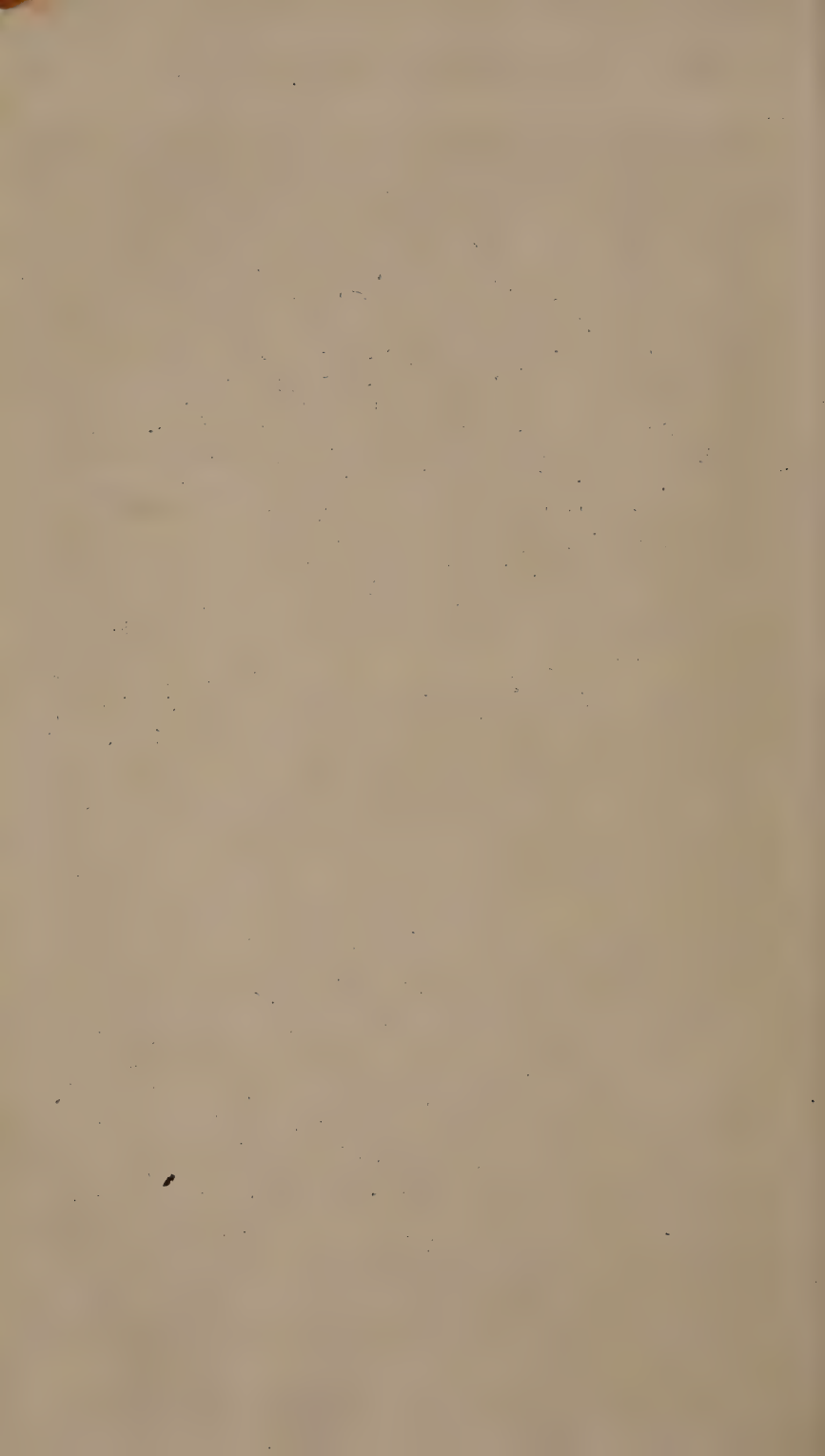
He further reports, that in a few minutes from the exhibition of the opiate, an exhilaration of spirits was perceived, which was quickly followed by a relaxation of the surface, the countenance looked cheerful, and a flush was spread on the cheek. The pulse from being weak, quick, and sometimes irregular, became less frequent, full, and equal; an agreeable warmth was diffused over the whole frame, and every unpleasant feeling varnished sometimes in a quarter of an hour. Sleep now and then followed a large dose; but this did not in general happen.

As soon as any symptoms indicated another paroxysm, whether on the following day or not, till the tertian interval, the *tinctura opii* was repeated in the same manner as in the former fit, and always with equal success; so that the patient seldom experienced much trembling or shaking. He adds, the second paroxysm was commonly an hour or two later in the day than the preceding one, and but few instances occurred where any indisposition indicated a third attack at the expected period of accession. The very patients themselves, he observes, were not a little surprised at the sudden change in their sensations by so small a quantity of medicine; and that they were certainly the completest cures which ever came under his observation.

A late writer tells us*, that he gave five grains of the subcarbonate of ammonia with an equal quantity of camphor, and a scruple of aromatic confection, in cases of Walcheren intermittents, with greater success than any other medicines. The *confectio opii* no

* See Observations on the Diseases of Walcheren, by G. Dawson.





doubt would have been preferable to the other confection. Indeed he acknowledges that he found it superior to opium, or its tincture.

In the Medical Commentaries for the years 1794 and 1797, published by Dr. Duncan, we are informed by Mr. George Kellie, an ingenious navy surgeon, of the good effects of compression by the tourniquet, in stopping the cold fit of intermittents; and several instances are related of this curious fact. The plan pursued by him was to apply the instrument on one thigh and on one arm, of opposite sides, at the same time. In two minutes after the application of the tourniquets, the shaking and other symptoms of the cold stage entirely ceased, a mild hot stage was immediately induced, and the patient found himself quite relieved. After suffering the instruments to remain on for about fifteen minutes, they were removed, and the cold symptoms did not return.

From various trials which Mr. Kellie made, he concludes, first, that if at any time during the cold fit of an intermittent, tourniquets be so applied as to obstruct the circulation in two of the extremities (for example, one on the subclavian, and the other on the iliac of opposite sides), the hot fit will be induced in about three minutes afterwards; secondly, that if the tourniquets be applied previous to the accession of the paroxysm, the cold stage will be entirely prevented; and thirdly, that where the cold stage of an ague is either thus shortened, or altogether prevented, the following hot stage will be rendered both milder and of shorter duration.

Sulphuric æther, administered in the quantity of a drachm for a dose on the approach of the cold fit of an intermittent, has been found in some instances to prevent the accession of the hot one. In the fifth volume of Medical Facts and Observations, two cases are recorded by Mr. Davidson of the efficacy of this remedy, where the bark and other medicines which were previously used had failed. The first dose is not to be expected to remove the disease at once, and therefore on the approach of the next fit it ought to be repeated. During the intervals, the bark and other tonics are to be taken.

By administering an emetic immediately before the accession of the cold stage, we may sometimes be enabled to destroy the morbid catenation induced by the cause of the disease, and thereby prevent a return of the paroxysm.

Might not the affusion of cold water be employed with some prospect of success, two or three hours before the expected accession of the paroxysm, or immediately after the hot fit is completely formed? Indeed I have tried it, and with some advantage, in the former instance. The morbid catenation in these fevers has been broken by putting the patients under a copious shower-bath in the hot stage of the paroxysm.

On the authorities I have mentioned, we are induced to presume that we have a knowledge of powerful remedies for cutting short the cold fit of an intermittent; or, should the hot fit succeed, that it will certainly be rendered both milder and of shorter duration

each time of its return. Should we, however, be disappointed in our expectations, and the febrile symptoms run high, we may then advise the use of gentle diaphoretics, in small and frequently repeated doses, as prescribed under the head of Simple Continued Fever, or below*; and to increase their effect, the patient must be directed to drink frequently of tepid diluting liquors. If there is any inflammatory diathesis, nitre may be added to these medicines. Where there is much nausea with vomiting, the stomach may be washed out with one or two basinsfull of chamomile tea.

If incommoded by a cough, attended with a pain in the side affecting the breathing, we may recommend the application of a blister; and should these affections not be relieved by the remedy, it may not be improper to take away a small quantity of blood. If the head become much affected, either during the paroxysms or intermissions, the application of a blister to the back, and of leeches to the temples, will be advisable, laying opiates aside.

Should there be great coldness of the legs, with a sinking of the pulse, cataplasms of mustard may be applied to the soles of the feet for a proper length of time.

In Dr. Lind we find an advocate for the exhibition of opium likewise in the hot fit. He tells us he has observed, that, if taken during the intermissions, it had not the least effect, either in preventing or mitigating the succeeding paroxysm; when given in the cold fit, it once or twice seemed to remove it; but that when administered half an hour after the commencement of the hot fit,

* 3. R Succ. Limon. f. ℥ss.
Potassæ Subcarbon. ʒi. vel q. s. ad saturationem.

Aq. Menth. f. ℥j.

Antimon. Tartar. gr. ʒ.

Syrup. ʒij. f. M.

ft. Haustus, tertiis horis repetendus.

Vel,

4. R Liquor. Ammon. Acetat. f. ʒiij.

Aq. Cinnam. f. ʒij.

— Puræ, f. ʒv.

Vini Antimon. Tart. ʒ. xv.

Syrup. Cort. Aurant. f. ʒj. M.

ft. Haustus.

Vel,

5. R Pulv. Antimonial. gr. ij.

— Contrajerv. gr. x. M.

ft. Pulv. 4tis horis sumendus.

Vel,

6. R Pulv. Ipecac. C. gr. viij.

Capiat tertia quaque hora.

* 3. Take Juice of Lemon, half an ounce.
Subcarbonate of Potass, one scruple, or enough to saturate it.

Mint Water, one ounce.

Tartarized Antimony, the sixth of a grain.

Common Syrup, two drachms.

Mix them for a draught, which is to be repeated every three hours.

Or,

4. Take Solution of Acetate of Ammonia, three drachms.

Cinnamon Water, two drachms.

Pure water, five drachms.

Wine of Tartarized Antimony, fifteen drops.

Syrup of Orange Peel, one drachm.

Mix them for a draught.

Or,

5. Take Antimonial Powder, two grains.

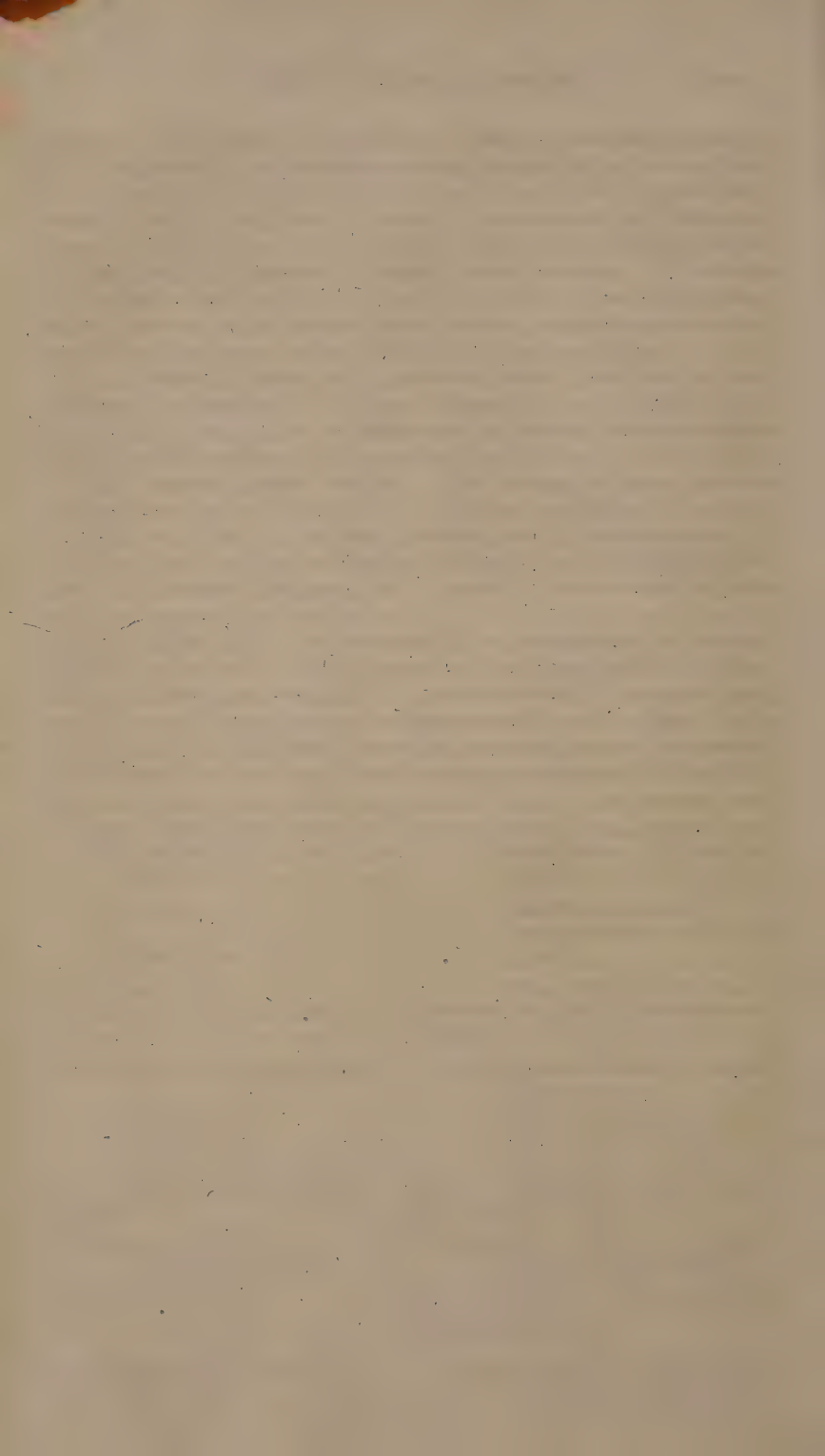
Powdered Contrajerva Root, ten grains.

Mix them, and let this powder be taken every four hours.

Or,

6. Take Compound Powder of Ipecacuanha, eight grains, repeating the dose every three hours.





it generally afforded immediate relief. When given in the hot fit, he observed the following effects to ensue:—1st, It shortened and abated the fit; and this with more certainty than an ounce of the bark was found to affect the disease. 2d, It generally gave a sensible relief to the head, took off the burning heat of the fever, and occasioned a profuse sweat. This sweat was attended with an agreeable softness of the skin, instead of the burning sensation which affects patients sweating in the hot fit, and was always more copious than in those who had not taken opium. 3d, It often produced a soft and refreshing sleep to a patient tortured in the agonies of the fever, from which he awaked bathed in sweat, and in a great measure free from all complaints.

The Doctor has always observed, that the effects of opium are more uniform and constant in intermitting fevers, than in any other disease, and are there more quick and sensible than those of any other medicine. An opiate thus given soon after the commencement of the hot fit, by abating the violence and lessening the duration of the fever, preserves the constitution so entirely uninjured, that, since he used opium in agues, a dropsy or jaundice has seldom attacked any of his patients in those diseases. When opium did not immediately abate the symptoms of the fever, it never increased their violence; on the contrary, most patients reaped some benefit from an opiate given in the hot fit, and many of them bore a large^d dose at that time than they could at any other. Dr. Lind offers it as his opinion, that opium in this disease is the best preparative for the bark, as it not only produces a complete intermission, in which case alone that remedy can be safely administered, but occasions such a salutary and copious evacuation by sweat, as generally to render a much less quantity of bark requisite.

When we obtain an intermission, the cinchona bark is to be given, during the intervals, in large doses. One or two drachms of the powder may be taken every hour, if the stomach will bear so much, as the benefits to be expected from this medicine greatly depend on a large quantity being administered in a short space of time; for five or six ounces of bark taken in a few days, will be attended with a much better effect than perhaps as many pounds taken in the course of some weeks. If it will not sit easy on the stomach in substance, we must be content to substitute a decoction or infusion of it; or we may give the extract*, joining a few drops of diluted sulphuric acid.

Where the intermissions between the paroxysms are long, as in the tertian and quartan types, we should delay giving the bark until within eight hours or so of the accession of the cold fit.

* 7. R Extract. Cinchon. gr. xv.

Decoct. ejusdem, f. ℥jss.

Tinct. Cort. Aurant. f. 3j. M.

ft. Haustus, alternis horis sumendus.

* 7. Take Extract of Peruvian Bark, fifteen grains.

Decoction of the same, one ounce and a half.

Tincture of Orange Peel, one drachm.

Mix them, and let this draught be taken every other hour.

If all the forms which have been mentioned are nauseated and rejected by the stomach, we may advise the bark to be given in clysters, in which form it likewise proves very efficacious. For this purpose, about a drachm of its extract, dissolved in a sufficient quantity of water, with the addition of a few drops of tinctura opii, in order to its being longer retained, will be most proper. With children who cannot be prevailed on to take the bark, we may administer it with much efficacy in this way, repeating the clyster every four hours. For the cure of intermittents in children, the bark has sometimes proved effectual when applied externally, by putting the powder of it into a quilted waistcoat.

In most intermittents it would perhaps be the best practice to unite opium with the cinchona bark, as it would enable the stomach to bear much larger doses of the latter, and likewise add very considerably to its good effects.

It is conjectured by some physicians, that cinchona stops the paroxysms of an ague, not through the medium of the circulation, but by its tonic effect on the nerves of the stomach; and indeed it is only in this way that the salutary operation of several other remedies in intermittent fever can be accounted for.

Various substances of either an astringent, stimulant, or aromatic nature, such as alum, the various preparations of iron, &c., nutmeg, and snake-root, have been joined to the cinchona bark, with a view of increasing its powers; but as these lessen its dose by their bulk, it will be best to give it by itself, unless it occasions a purging, and then about eight or ten drops of tinct. opii, or about a drachm of the tinct. kino, may be added to each dose. On the contrary, should it produce costiveness, some gentle laxative may be taken occasionally, such as a few grains of rhubarb.

In intermittents of long continuance, where the person is advanced in years, and weak, the habit phlegmatic, the season rainy, and the situation damp, it will be proper to make an addition of snake-root and some warm aromatic* to the cinchona bark; and when the symptoms have more of an inflammatory tendency, it may be given with a small portion of the potassæ subcarbonas†.

* 8. R Cort. Cinchon. crass. ʒj.

Coq. in
Aq. Font. Oj. ad Oss.
Colat. adde

Tinct. Serpent. Rad.
— Card. C. aa f. ʒvj. M.

Capiat Cochli. iij. magna pro dos. sæpe per diem.

† 9. R Decoct. Cort. Cinchonæ, f. ʒjss.

Potassæ Subcarbon. gr. x. ad xv.

Syrup. Althææ, f. ʒij. M.

ft. Haustus, quartis horis adhibendus.

* 8. Take Peruvian Bark bruised, one ounce.

Pure Water, one pint; boil it over a slow fire until reduced to half a pint, strain it, and when cool, add

Tincture of Snake-Root.

Compound Tincture of Cardamoms, six drachms of each.

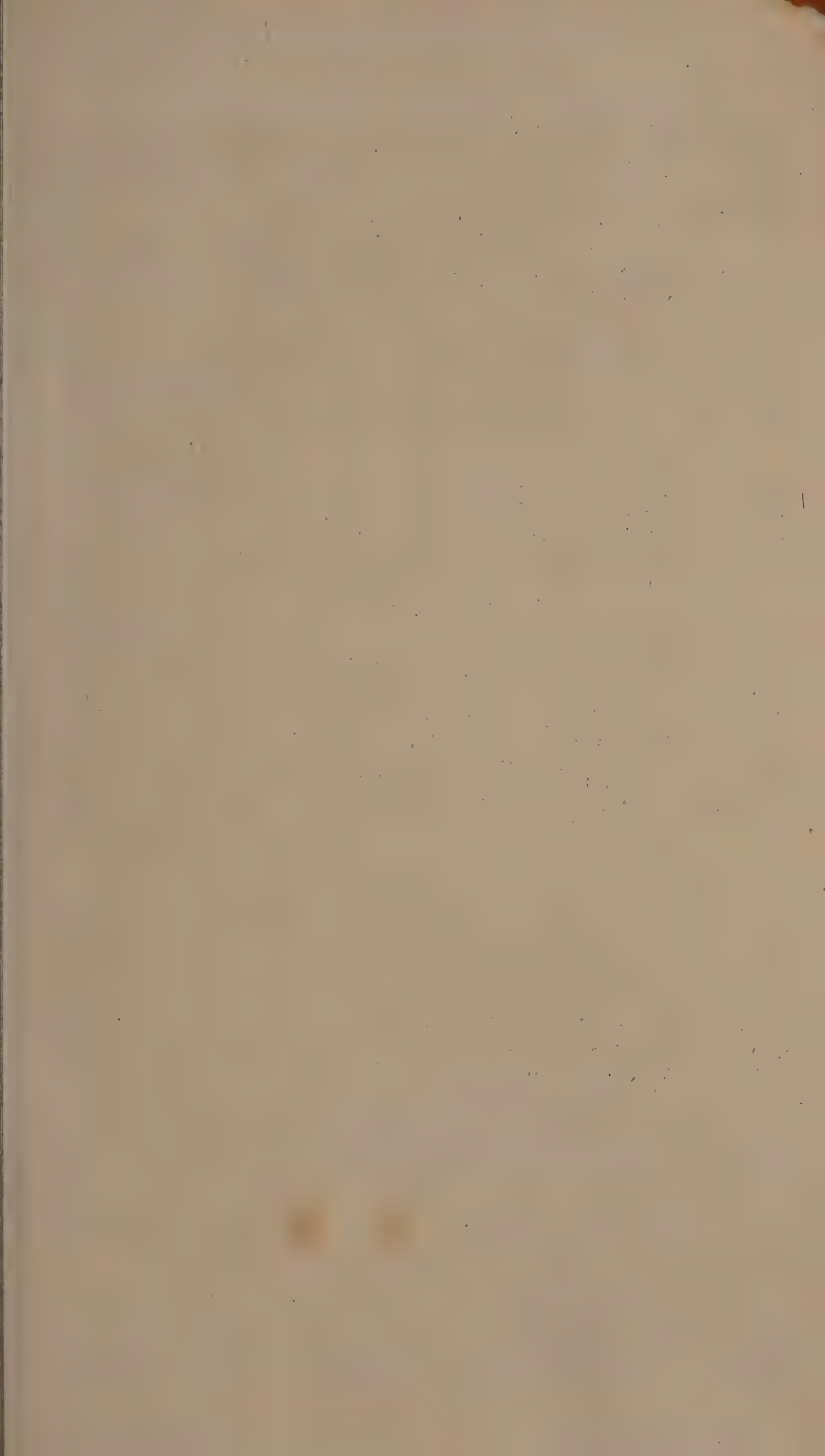
Mix them, and take three large spoonfuls for a dose, several times a day.

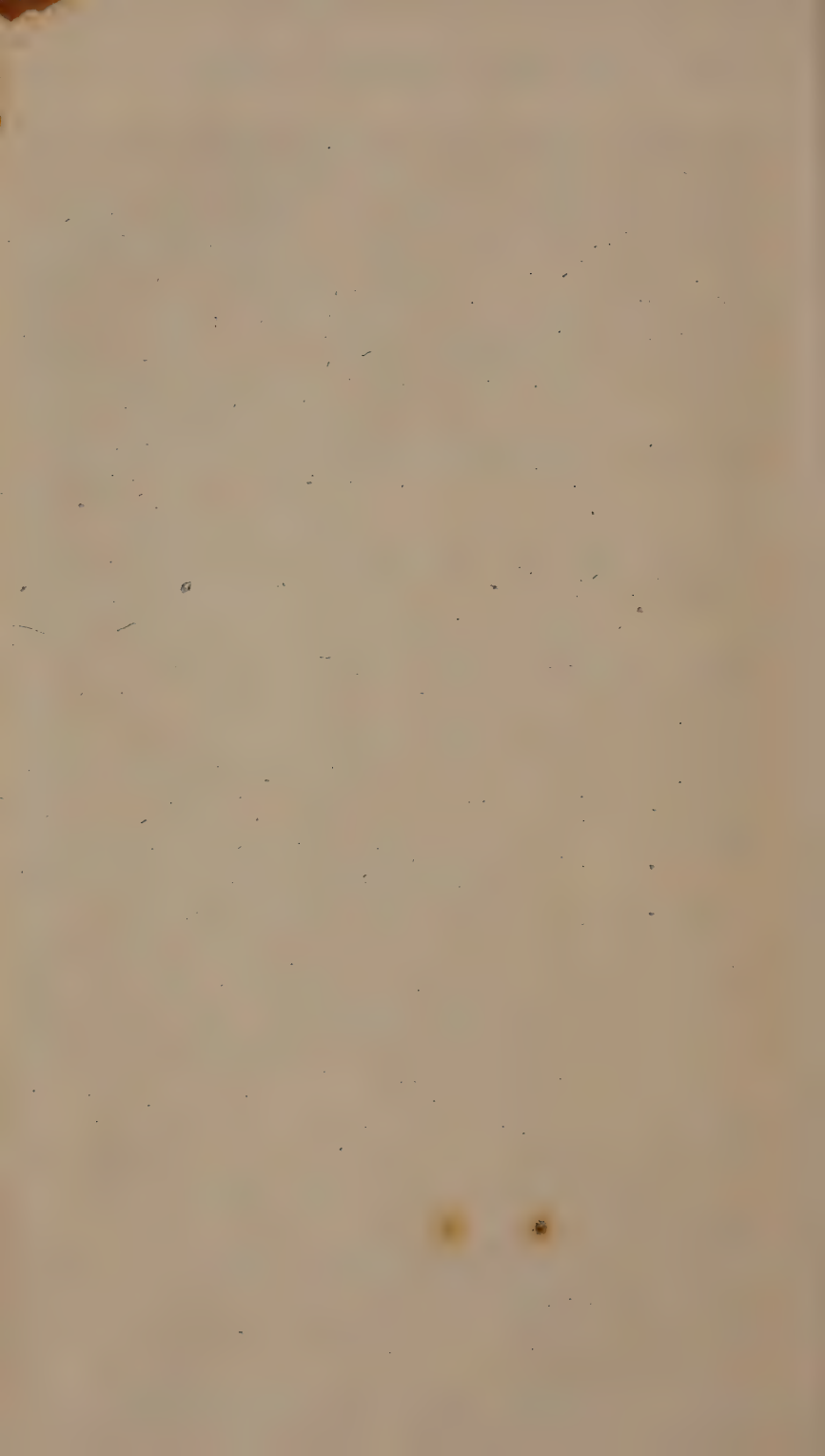
† 9. Take Decoction of Peruvian Bark, an ounce and a half.

Subcarbonate of Potass, from ten to fifteen grains.

Syrup of Marshmallows, two drachms.

Mix them. This draught may be taken every four hours.





In cold climates, it will in general be advisable to wait for a perfect and regular intermission before we give the bark: but in warm ones, where intermittents are apt to degenerate into continued fevers or remittents, and in which the habit is more irritable and weak, it will be right to administer it, even on the most imperfect intermission, or slightest remission.

In all cases of intermittents, it will not be sufficient that the recurrence of paroxysms be stopped for once or twice by a use of the bark; a relapse is commonly to be expected, and it should therefore be prevented by a continued exhibition of the medicine at proper intervals; even for some weeks after the disease appears to be removed, it may be advisable to take a little of it occasionally, particularly in damp weather, or during the prevalence of an easterly wind.

Various species of the bark are to be met with among the vendors of this medicine; and several gentlemen of eminence in their profession have given a decided preference to the yellow (*cinchonæ cordifoliæ cortex*), as possessing virtues far superior to the red, or any other species yet introduced into use.

From various trials made with it, they report, that it is bitter to the taste, and more astringent than the other sorts; that a decoction and infusion of it are less liable to undergo fermentation; and that in every instance in which it was used by them, it invariably proved successful. Half a drachm of the yellow bark in powder, given every two hours, has in general been found sufficient for the cure of an intermittent; hence they have presumed that it possesses nearly a double febrifuge power to that of common bark. Of its good effects I can myself bear testimony, having used it with the most decisive success.

During my residence in the West Indies, I met with many cases that resisted the powers of cinchona, and that gave way to a use of quassia. Indeed, so sovereign a remedy was this found in intermittents, and so easy was it to be obtained, that it was pretty generally substituted by all practitioners, for the cinchona, in common cases, on the plantations. The best way of administering it is in the form of infusion, as below*. The angustura bark (*cortex cuspariæ*) is another remedy which has been often used with success.

A great variety of other barks, such as the *cinchona Jamaicensis* discovered by Dr. Wright; the *cinchona Charibbæa*, or St. Lucia bark, the *Tellicheri bark*, the *Swietenia febrifuga* of Dr. Roxburgh, &c. have been substituted for the Peruvian with a very good effect

* 10. R Quassiæ Contus, ʒij.
Aq. Bullient. f. ʒviij. Post horam
Col. et adde

Tinct. Cascaril.
—— Cardam. C. a ā f. ʒss. M.

Cochlaria iij. magna tertiis horis sumenda.

* 10. Take Quassia Bark bruised, two drachms.
Boiling Water, eight ounces; infuse for an hour, then strain off the liquor, and add
Tincture of Cascarilla,
Compound Tincture of Cardamoms,
each half an ounce.

Mix them. Three large spoonfuls are to be taken every three hours.

when this could not be obtained. As a tonic and febrifuge, the willow bark has of late years been much employed with considerable success both in England and on the Continent. The varieties of the willow which have been noticed by botanical writers, are very numerous; but the *salix latifolia* or *caprea* (broad-leaved willow bark) seems to possess virtues greatly superior to the others. A late writer* has endeavoured indeed to convince us, that it has a superior efficacy above the *cinchona* in various diseases, more particularly that branch of the healing art termed medical surgery. The decoction is the form to which this practitioner gives the preference: one ounce and a half of the dried and pounded bark boiled for a quarter of an hour in two pints of soft water. Of this, the ordinary dose is two or three spoonsful, given three or four times a day.

A cheap substitute for the bark of *cinchona*, and which has proved very successful, consists of equal parts of bistort and calamus aromaticus, with the addition of a little ginger. This remedy may be given in the same doses as the former.

The *radix rhataniæ* is another substitute, which has lately been proposed for the *cinchona*; but from a few trials I have made of it in intermittents, I am convinced that it is by no means deserving of the encomiums which have been lavished on it by Dr. Rees. Twenty grains of the powder may be considered as a moderate dose; and it may also be employed either in the form of extract, decoction, or tincture.

All these barks, probably, owe their efficacy to one common principle; but what this is, it may be difficult to ascertain. Their febrifuge power has been attributed by some principally to the tannin, which they all contain in a greater or less quantity; but this opinion must be erroneous, as it appears, from Sir H. Davy's experiments, that very little tannin is contained in the *cinchona*, or in the other barks supposed to be possessed of febrifuge properties.

Charcoal is a remedy much employed by physicians in Sicily in the cure of intermittent fevers, and apparently with some success†. It is administered in doses of one scruple, or half a drachm, three or four times a day.

In intermittents, where from flatulency, distention of the abdomen, or a retention of fæces, it becomes necessary to have recourse to laxatives, we may employ something of a warm aromatic nature‡.

* See Wilkinson's Experiments on the Broad-leaved Willow Bark.

† Edinburgh Medical Journal for October, 1814.

‡ 11. R Pulv. Rhei, gr. xv.
—— Cinnam. Compos. gr. v.

ft. Pulvis.

Vel,

12. R Infus. Sennæ, f. ʒjss.

Tinct. Rhei, f. ʒij.

—— Lav. C. f. ʒj. M.

ft. Haustus.

‡ 11. Take Powdered Rhubarb, fifteen grains.
Compound Powder of Cinnamon,
five grains.

Mix them.

Or,

12. Take Infusion of Senna, one ounce and
a half.

Tincture of Rhubarb, two drachms.
Compound Tincture of Lavender,
one drachm.

Make them into a draught.





which should be taken during the intermissions, so that its operation shall have ceased before the accession of the next paroxysm.

It often happens, when intermittents have continued a long time, that scirrhusities of the liver or spleen take place, which are vulgarly denominated ague cakes. These complaints have been attributed to an improper use of the cinchona bark; but they evidently arise from the great quantity of blood which is thrown on these parts during the cold fit, which distends them and so produces scirrhusity, and which we often find it difficult to remove, although a stop is put to the fever. In such cases it may be proper to join deobstruents with cinchona, as below*. If these do not answer, we must have recourse to mercury†. A small dose should be given every night, so as just to affect the mouth, but the tonic medicines are to be continued. If the patient cannot take this remedy internally, he must substitute its external use in the form of unction, rubbing into the groins about a scruple, if an adult, of the unguentum hydrargyri fortius every night at bed-time.

Mercury is, however, employed unsuccessfully in many instances of these enlargements, and which have afterwards given way to other remedies. Two cases of enlarged spleen, which resisted the effects of mercury, although the salivary glands had been sufficiently excited, and were afterwards removed by the succus inspissatus conii, are recorded in the work of a late writer‡.

In warm climates particularly, these swellings are often to be met with as the consequence of long continued intermittents; but of these more particular mention is made under the head of Chronic Inflammation of the Liver, as also of the Spleen.

These tumours, by pressing on the ramifications of the vena portarum, which passes into the liver, and branches in the manner of an artery, prevent the blood from returning from the abdominal viscera with the same facility that it commonly does. The passage

‡ See Essay on Hepatitis and other Bilious Complaints in India, as well as Europe, by Charles Griffith, M. D.

* 13. R Pulv. Cinchon. ʒj.

— Rhei, ʒjss.

Sodæ Subcarbon. ʒij.

Syrup. Zingib. q. s. M. ft. Elect.
Cujusumat Coch. min. ter quaterve in die.

† 14. R Hydrargyr. Submuriat. gr. j.

Confect. Opii, gr. iij. M.
Fiat pilula, omni nocte sumenda.

Vel,

15. R Pilul. Hydrargyri, gr. iij.
— Opiat. gr. ij. M.
ft. Pilula.

* 13. Take Peruvian Bark in powder, one ounce.

Powdered Rhubarb, one drachm and a half.

Subcarbonate of Soda, two drachms.

Syrup of Ginger, as much as may be sufficient to form the whole into an electuary, of which take about a teaspoonful three or four times a day.

† 14. Take Submuriate of Mercury (Calomel), one grain.

Opium Confection, three grains.
Form them into a pill, to be taken every night.

Or,

15. Take Mercurial Pill, three grains.
Opium Pill, two grains.

Form them into a pill, to be taken as the former.

of the blood being thus retarded, occasions a greater extravasation of lymph in the cavity of the abdomen, so that the ordinary exertion of the absorbents is not sufficient to take up the whole lymph. Thus an ascites takes place, and in this case we must have recourse to the means advised under that head.

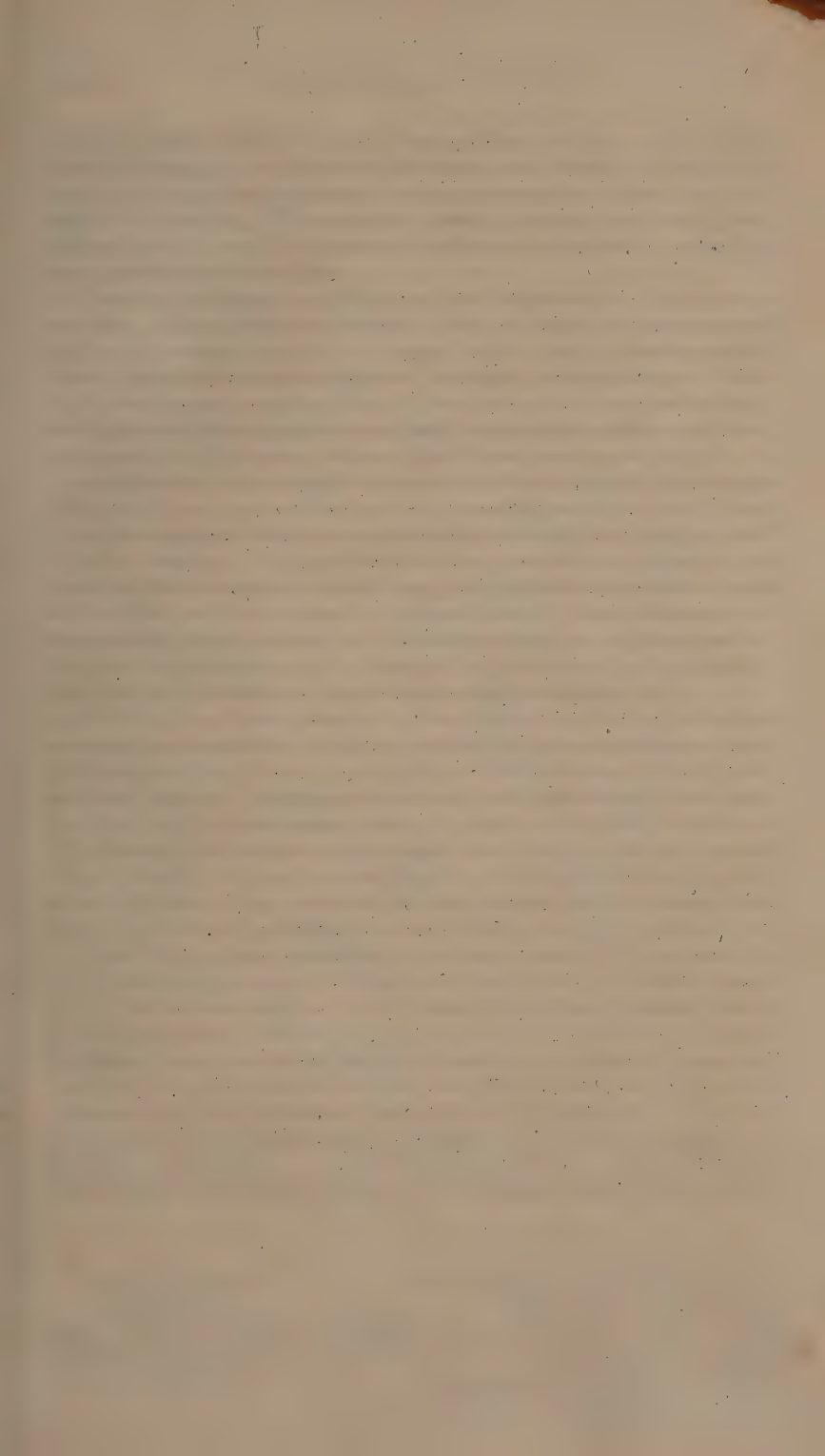
Dropsy likewise arises sometimes from mere weakness, without any tumour of the abdominal viscera, and occasioned by the long continuance of the disease. In these instances it may be removed by exhibiting the bark of the cinchona together with stomachic bitters, diuretics, and chalybeates. As the strength returns, and the patient recovers health, the dropsical appearances will diminish by degrees.

When tumours are formed in any of the abdominal viscera, it not uncommonly happens that they press on the ductus communis choledochus, the duct of the gall-bladder, the hepatic duct, or the pori biliarii; by which means the bile is prevented in part, or wholly, from getting into the duodenum; it is therefore absorbed, and produces jaundice of itself, without any concomitant dropsical symptom, or along with it, ascites. When this happens, the disease is generally fatal.

The blood, by being determined from the blood vessels upon the abdominal viscera, when the patient becomes weak after an intermittent has continued for some months, sometimes occasions an increased secretion from the glands of the intestines, and thus gives rise to a diarrhœa. This affection usually proves more severe during the remissions and intermissions; and less severe, or ceases altogether, at the time of the accession and during the time of the paroxysm. Such diarrhœa tends to increase the weakness considerably, and not unfrequently occasions dropsical appearances. At first, œdematous swellings appear in the lower extremities; these increase, rising up to the thighs, and then to the integuments of the abdomen. Ascites also takes place. If astringent remedies be employed, so as to put a stop to the diarrhœa, the dropsical appearances usually increase, and the intermittent continues to recur, although often very obscurely and very irregularly. If the diarrhœa be permitted to go on, or if it has been stopped, and is allowed to return by leaving off the astringents, the weakness increases in such a degree as to destroy the patient. If the bark of cinchona be exhibited, it often increases the diarrhœa without having the effect of preventing irregular returns of the attacks or exacerbations. In this case, Dr. Fordyce* says it will be best to clear the primæ viæ, by employing about twenty-five grains of rhubarb; after its operation is over, to exhibit cinchona in pretty considerable quantity, such as a drachm every three hours, and to give at the same time a grain of ipecacuanha with fifteen drops of tinctura opii, together with a moderate quantity of any warm spice, every four hours.

In some cases of intermittents, which have continued a great

* See his Fourth Dissertation on Fever.



1. The first part of the report is a general
introduction to the subject of the study.

2. The second part of the report is a detailed
description of the methods used in the study.
This includes a description of the subjects,
the experimental design, and the data collection
procedures. The third part of the report is a
discussion of the results of the study. This
includes a description of the findings, a
comparison of the results with previous research,
and a discussion of the implications of the
study.

3. The fourth part of the report is a conclusion
and a list of references. The conclusion
summarizes the main findings of the study and
provides a final statement on the significance
of the results. The list of references
includes all the sources of information used
in the study.

4. The fifth part of the report is a list of
appendices. These include any additional
information that is relevant to the study but
is not included in the main text.

5. The sixth part of the report is a list of
figures and tables. These include any
visual representations of the data that are
used in the study.

length of time, owing to their having been entirely neglected in their beginning, or where the cinchona has failed to procure the desired effect, preparations of iron and copper have been administered with success. The oxydum zinci, given in the dose of two grains thrice a day, has removed obstinate intermittents when the usual remedies have failed.

The zinci sulphas has likewise been administered with much success. The sulphate of copper, given in doses of a quarter or half a grain every four or six hours, is also said to have proved very efficacious in some cases of obstinate intermittents. As a tonic, the cuprum ammoniatum * has been given with advantage. All these may be employed along with a decoction of the cinchona, or any of the other tonic bitters which have been mentioned.

Arsenic has been strongly recommended as a remedy in intermittents, and it is undoubtedly a very powerful medicine, for I have found it to remove obstinate intermittents which had long resisted all other means. The inhabitants of a considerable portion of the country which surrounds Salisbury (the place of my residence), are very subject to these fevers, but I have never yet been disappointed in removing even those of an obstinate nature, by a proper use of the arsenical solution: it is, however, my constant practice to conjoin four or five drops of tinctura opii with each dose of it.

The late Dr. Fowler seems to have been the first physician to advise this medicine in agues; and on his recommendation many practitioners have used it, agreeably to his directions, with the most pointed success. The preparation he advised is now introduced into the London Pharmacopœia, under the name of liquor arsenicalis. The dose is from two to twelve drops, once, twice, or oftener in the day, according to the age, strength, &c., of the patient. Eight days' administration of the medicine, in the manner just mentioned, will generally be found sufficient for the radical cure of an intermittent.

Vomitings, gripings, swellings, and the loathing of food, are the troublesome symptoms now and then produced by an improper use of the arsenical solution. They however disappear generally on a discontinuation of the drops, or only require the exhibition of gentle opiates; or some warm cathartic, such as the tincture of rhubarb.

From the observations which have been made on the use of arsenic in agues, there seems just grounds for believing it to be the most powerful of all the medicines which have been recommended in these complaints. In Lincolnshire, which is a fenny country, where agues are very prevalent, it is universally used, and with the

* 16. R Cupr. Ammoniat. ʒj.

Mic. Panis, ʒij.

Syrup. Cort. Aurant. q. s. M. fiant pilul. xxiv. capiat j. vel ij.—ijj. (sensim augendo dosem) horâ decubitus quotidie.

* 16. Take Ammoniated Copper, one scruple.

Crumb of Bread, two drachms.

Syrup of Orange Peel, as much as will be sufficient to form the mass, which divide into twenty-four pills. Take one, two, or three, every night at bed-time, gradually increasing the dose.

most uniform success. Military and naval surgeons will find the arsenical solution a valuable substitute for the bark of cinchona, when their store of this is small or exhausted. Arsenic has long been administered by empirics with the greatest success in intermittents, under the appellation of the ague-drop.

The manner in which arsenic acts in curing intermittent fevers, Dr. Darwin thinks, cannot be by its general stimulus, because no intoxication or heat follows the use of it; nor by its peculiar stimulus on any part of the secreting system, since it is not in small doses succeeded by any increased evacuation or heat, and must therefore exert its power on the absorbent system. He suspects its success in the cure of intermittents to depend on its stimulating the stomach into stronger action, and thus by the association of this viscus with the heart and arteries, prevents the torpor of any part of the sanguiferous system.

A combination of the arsenical solution with cinchona* in substance, decoction or infusion, is likely, I think, to prove a valuable remedy in cases of obstinate intermittents, and where either of these medicines administered singly might fail.

During the fits of an intermittent, the patient's strength is to be supported by food of a light nutritive nature, such as preparations of barley, sago, panado, and the like; but when the fit is off, he may be allowed animal food, and a moderate use of wine. A change of air and situation has sometimes a happy effect in removing an intermittent, particularly if from a low marshy country to an elevated one. In autumnal intermittents it has been found, that the air of a city or large town is more favourable than that of the country, owing most likely to the great number of fires that are always burning. When none of the viscera are affected, cold bathing may be used with advantage.

As intermittents are very apt to return, the patient should carefully avoid all such causes as might produce a fresh attack. Should he be incommoded by a giddiness of the head, which is not un-

* 17. R Liquoris Arsenical. ℥ v.—x.

Decoct. Cinchon. f. 5x.

Tinct. Cort. Aurant. f. 3ij.

— Opii, ℥ v. M.

ft. Haustus, ter in die sumendus.

Vel,

18. R Infus. Calumbæ. f. 3xj.

Liquor. Arsenical. ℥ viij.

Tinct. Opii, ℥ iv.

— Cinchonæ C. f. 3j. M.

ft. Haustus, 4ta vel 6ta quaque hora capiendus.

* 17. Take Arsenical Solution, from five to ten drops.

Decoction of Peruvian Bark, ten drachms.

Tincture of Orange Peel, two drachms.

— of Opium, eight drops.

Mix these, and let the draught be taken thrice daily.

Or,

18. Take Infusion of Calumba, eleven drachms.

Arsenical Solution, eight drops.

Tincture of Opium, six drops.

Compound Tincture of Peruvian Bark, one drachm.

Mix them, and let the draught be taken every fourth or sixth hour.

commonly the case even after a slight attack of this fever, it may generally be relieved by volatiles * and the bark in wine.

REMITTENT FEVER.

By a remittent is to be understood where the fever abates, but does not go off entirely before a fresh attack ensues; or, in other words, where one paroxysm succeeds the other so quickly, that the patient is never without some degree of fever. It is to be observed, moreover, that the remissions happen at very irregular periods, and are of uncertain duration, being sometimes longer and sometimes shorter.

This fever is principally induced, as well as the intermittent, by marsh miasma, or the exhalations arising from stagnant water impregnated with the decaying remains of animal and vegetable substances, and is most apt to arise when calm, close, and sultry weather quickly succeeds heavy rains or great inundations. In warm climates, particularly as we approach the tropics, where great heat and moisture rapidly succeed each other, the remittent is a very prevalent type of fever, and often appears under a highly aggravated and violent form, prevailing epidemically. It is likewise often met with in low marshy situations abounding with wood and water, from which miasma are consequently evolved, and is most apt to attack those of a relaxed habit, those who undergo great fatigue, and those who breathe an impure air, and make use of a poor and unwholesome diet.

Although this fever is produced originally by marsh miasma, and in its simple state is consequently not of an infectious nature, still, under bad management, such as crowding too many sick together, and neglecting proper cleanliness and a free ventilation, there cannot be a doubt that it may, in its course, engender a matter capable of occasioning a highly contagious fever.

Remittent fever cannot be communicated at any great distance from the source of its exciting cause, however severely and epidemically it may prevail in certain situations and districts; and although the matter producing it be essentially the same, still we may conclude, I think, that a more aggravated form of disease is occasioned by a more concentrated state of the poison: hence the different degrees of severity of remittent fever at different periods of the year, and in different climates.

It has long been observed, that the natives of any place are

* 19. R Aq. Menth. Virid. f. ʒiijss.

Spirit. Ammon. Aromat. ℥l xxx.

Syrup Cort. Aurant. f. ʒss. M.

Capiat. Cochl. larg. j. quaterve in die.

* 19. Take Mint Water, three ounces and half.

Aromatic Ammoniated Spirit, forty-five drops.

Syrup of Orange Peel, half an ounce.

Mix them. The dose may be one large spoonful three or four times a day.

much less liable to be affected with the diseases peculiar to the situation than strangers, or those newly arrived; and it may likewise be added, that when they are attacked with any endemic affection, it is rarely so severe as it is found to prevail among strangers, and those not accustomed to the climate. This I had great opportunities of seeing confirmed in the West Indies, in the case of remittent fever: which seldom affects the natives so severely as it does Europeans not sufficiently naturalized, although in every respect using the same diet, and adopting the same mode of life.

Preceding an attack of a remittent fever, the patient is usually heavy and languid, and is troubled with anxiety, listlessness, sighing, yawning, and alternate fits of heat and cold. On its accession he experiences severe pains in the head and back, intense heat over the whole body, with thirst, difficulty of breathing, and great dejection of spirits; the tongue is white; the eyes and skin appear yellow; there is a pain and sense of swelling about the region of the stomach; nausea, and a vomiting of bilious matter, ensue; and the pulse is frequent and small.

After a continuance of these symptoms for a time, the fever abates considerably, or goes off imperfectly by a gentle moisture diffused partially over the body; but in a few hours it returns with the same appearances as before. In this manner, with exacerbations and remissions, it proceeds at last to a crisis, or is changed into a fever of a different type. In warm climates, the remission often occurs so early as the second day; but in cold ones, it frequently does not take place until from the fourth to the sixth or eighth day.

The accession of fever which has just been described is, however, the mildest form under which it ever makes its appearance; for sometimes a severe delirium arises, and carries off the patient during the first paroxysm; or the remission, perhaps, is scarcely perceptible, and is immediately followed by another paroxysm, wherein there is a considerable aggravation of all the symptoms. The heat of the body is greatly increased; the face highly flushed, the thirst excessive, the tongue is covered with a dark brown fur; respiration laborious, the pulse quick, throbbing, and tremulous, and a delirium arises. At the distance of some time, perhaps, another short or imperfect remission again takes place; but the symptoms return once more with redoubled violence, and at length destroy the patient.

The symptoms which attend a remittent fever are apt to vary according to the situation and constitution of the patient, and likewise the season of the year, and therefore it is impossible to give a certain detail of them; for sometimes those pointing out a redundancy of bile predominate, sometimes the nervous are most prevalent, and at other times the putrid.

A remittent fever is always attended with some hazard, particularly in warm climates, in which it usually goes through its course

and less liable to be attacked with the disease than those who are attacked on those newly arrived; and when they are attacked with the disease, it is found to be more severe than in those who are not attacked. The disease is not so common in the tropics as in the temperate zone, and it is not so common in the temperate zone as in the cold zone. The disease is not so common in the cold zone as in the temperate zone, and it is not so common in the temperate zone as in the cold zone. The disease is not so common in the cold zone as in the temperate zone, and it is not so common in the temperate zone as in the cold zone.

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in the space of five or six days; but in cold ones, its crisis is not usually effected until the twelfth or fourteenth. The shorter and more obscure the remissions are, the greater will be the danger; and each succeeding paroxysm is attended with more risk than the former. On the contrary, the milder the attack, and the nearer the fever approaches to an intermittent, the fairer will be the prospect of a recovery.

The usual appearances on dissection are, congestions of blood in the liver and spleen, inflammations in the alimentary tube, a distended state of the venous vessels of the brain, and serous effusion into the cavities of that organ.

From the determinations to particular organs which take place in a remittent fever, and the marks of inflammation which are occasionally observed, on dissection, in the brain, stomach, and biliary organs, it would seem that bleeding is a necessary operation. In both cold and warm climates, and at an early stage of the disease, it will be proper to have recourse to it, where the patient is young and of a full plethoric habit, the pulse full and hard, the heat intense, the breathing difficult, or the head much affected with stupor or delirium: and in some cases it may be necessary to repeat the operation in a few hours, if the force of the circulating fluids is not sufficiently diminished thereby: but in warm climates, when none of these symptoms are present, it will be better to omit it, especially if the person has been an inhabitant therein for any length of time, and not lately arrived from Europe.

In all protracted cases of this fever, under every climate, where the pulse is weak, but still the head much affected, the application of cupping glasses to the occiput, or of leeches to the temples, and blisters, will be more advisable than venesection.

To assist in allaying the violence of the fever, it will be prudent carefully to remove and avoid every thing that might in the least contribute to increase it; such as too strong a light falling on the eyes, all noise and motion, and likewise any excess of heat. The patient is therefore to be kept perfectly quiet; the covering of his bed is to be light, and his chamber of a moderate temperature, by allowing a free admission of cool air into it. To assist these means, he should be presented from time to time with some cooling acidulated liquor, such as lemonade, tamarind beverage, or a solution of the supertartrate of potass, or even cold water. Throughout the whole course of the disease, it will be advisable to change his body-linen, as well as that of the bed, frequently; to sprinkle his chamber often with vinegar, and to remove immediately whatever he voids by stool. As in most cases there is a determination to the brain, the patient's head should be kept rather elevated, and being shaved, numerous folds of linen, moistened with vinegar and water may be kept constantly applied to it: his feet may be immersed occasionally in warm water.

As nausea usually prevails at the commencement of the disease, it will, in all cases, be right to cleanse the stomach by giving a

gentle emetic of ipecacuanha, or a solution of tartarized antimony, which perhaps may be preferable: the operation of this being over, the bowels may then be emptied by some gentle laxative, which will seldom fail in bringing off a considerable quantity of dark bilious matter. Drastic purges, by determining inwardly and increasing the irritability of the stomach, would be prejudicial; and therefore, if it is necessary to obviate costiveness in the course of the disease, it will be most advisable to do it by the laxative medicines here prescribed*, assisted now and then with aperient clysters

The necessity of carefully inspecting the alvine discharges in remittent fever cannot be too strongly inculcated, as it affords the best or principal index as to the regulation of our employing purgative medicines.

In this fever, as well as typhus icterodes, the submuriate of mercury, combined with rhubarb or jalap, may be regarded as a valuable remedy, where we wish to carry off putrid feculent matter from the bowels, and there is at the same time any degree of nausea or vomiting present; as, from the smallness of its bulk, it may possibly be retained on the stomach when every other purgative might be rejected.

After these evacuations, and where there is no delirium present, an opiate will be found of great service in quieting the commotions induced either by the spontaneous or artificial discharges, and in enabling the patient to retain on his stomach both nourishment and medicines.

In the remittent fevers of warm climates, as well as of temperate countries in the hotter seasons of the year, the best effects are to be derived from cold affusion, or throwing cold water over the patient; but it is to be understood that the height of the paroxysm is the proper time for the application of the remedy. The sensations of heat are then strong; the headach is violent, and delirium frequently runs high. By employing the remedy at an early period, we may be able either to arrest the disease precipitately, or bring about an early solution of the paroxysm; but at the least we may for the most part so ameliorate its aspect, as that from an obscure

* 1. R Potassæ Tartrit. ʒij.
Infus. Sennæ Compos. f. ʒjss.

Tinct. Jalapæ, ʒi. M.
ft. Haustus.

Vel,
2. R Pulv. Rhei, gr. x.—xx.

Hydrargyr. Submuriat. gr. v.

Syrup. q. s. M.
Fiant Pilul. iv. pro dos.

Vel,

3. R Hydrargyr. Submur. gr. v.

Pulv. Jalap. gr. xv. M.
ft. Pulvis.

* 1. Take Tartrate of Potass, two drachms.
Compound Infusion of Senna,
one ounce and a half.

Tincture of Jalap, one drachm.

Mix them for a draught.

Or,

2. Take powdered Rhubarb, from ten
to twenty grains.

Submuriate of Mercury, five
grains.

Common Syrup, as much as will
form the mass; which divide into four
pills, to be taken at once.

Or,

3. Take Submuriate of Mercury, five
grains.

Powdered Jalap, fifteen grains.

Mix them, and take them for a dose.

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remittent it will soon become an intermittent of a distinct and regular type. Where signs of congestion, or irregular action, present themselves in the abdominal or biliary system, and the disease is recent, it will be advisable, previous to having recourse to affusion, to premise proper evacuations.

In the progress of the disease, where much debility has arisen, aspersion, or sponging the body over with cold water and vinegar, together with an internal use of wine, may be substituted for affusion or immersion.

The general effects to be observed from affusion, where it can be practised with propriety, are a diminution of heat and anxiety, greater cheerfulness of countenance, improved recollection, tendency to sleep, the pulse becoming fuller and more uniform, and the skin moist, with now and then a distinct remission.

To alter the type of the fever, and bring the remissions into perfect intermissions, if possible, by promoting a gentle diaphoresis, it will be proper to give antimonials in small and frequently repeated doses. They may be prescribed as mentioned under the head of Simple Continued Fever, or as below*; and to assist their effect, the patient should take frequent small draughts of some tepid diluting liquor.

Where frequent vomitings prevail, antimonials will not be proper. In their stead, we may direct the saline medicine to be administered so as that the effervescence shall take place in the stomach, with the addition of about ten drops of tinct. opii to each dose. Moreover, we may direct flannel cloths, wrung out in a warm decoction of camomile flowers and bruised poppy-heads, with an addition of rectified spirits, to be kept constantly applied over the region of this organ.

Should these means fail in procuring the desired effect, a large blister may be put immediately over the part; which will be found, in general, a very effectual remedy. The early application of a blister, even in cases where no great irritability of the stomach prevails, might in most instances be proper, as it will tend to prevent the determination to that organ. Blisters likewise prove highly serviceable in the latter stages of a remittent fever, when the spirits flag, and the pulse is low and fluttering, with insensibility, or a disposition to coma. In such cases they may be applied between the shoulders, or to the legs. Sinapisms of mustard may also be put to the soles of the feet.

When a severe vomiting has arisen, the patient ought to swallow as little drink as possible, and should only now and then just moisten his mouth and throat; for whatever reaches the stomach is sure to be rejected shortly with considerable violence; and each

* 4. R Pulv. Jacob. Ver. gr. iv.
Camphor. gr. iij.
Confect. Rosæ, q. s. M.
ft. Bolus, 3tia vel 4ta hora sumendus.

* 4. Take James's Powder, four grains.
Camphor three grains.
Confection of Roses, a sufficiency
to form them into a bolus or two pills, to
be taken every third or fourth hour.

time it is thrown into these convulsive motions, the disease is strengthened, and the person exhausted. Under such circumstances it will be better to support the strength, by administering clysters, composed of broths and other nutritious liquids, than to attempt it by giving any thing by the mouth.

When the stomach is not in an irritable state, and every thing is retained readily, the patient is to be supported by food of a light generous nature. During the remissions, a little wine may be mixed with it.

As soon as the fever shews a disposition to yield, and a perfect remission takes place, we ought to give the bark of cinchona in substance, and in such doses as the stomach will easily bear: and if about twenty drops of the acidum sulphuricum dilutum are added to each dose, the effect will be increased. Should the cinchona in powder prove either disagreeable to the patient, or excite nausea, then a decoction or infusion of it must be substituted. If any of its preparations should occasion a purging, about ten drops of the tinctura opii, or a drachm of the tinct. catechu, may be added to each dose.

In cold climates we may wait for a perfect and complete remission before we give the cinchona: but in warm climates we ought to administer it even on the most imperfect and short remission: and although it may not prove sufficiently efficacious to prevent a fresh attack at first, yet it will seldom fail to mitigate the subsequent returns of the fever, and will at last bring about a regular and perfect intermission.

By neglecting to give the cinchona in the West Indies and other warm climates upon the first remission, the fever is apt to assume a continued form. Where danger is to be apprehended with every return of the paroxysm, and where the interval is likely to be short, we should give at least half an ounce of this bark at once, immediately on the commencement of the intermission. During the rest of the intermission or remission, we may administer it in doses of about two drachms, repeated at such distances as that the patient shall take an ounce, or an ounce and a half, if possible, previous to the next accession. When the interval is pretty long, the remedy may be divided into smaller doses.

To guard against a relapse, the cinchona should be continued for some days after a cessation of the attacks, and not be too hastily left off, as is sometimes the case.

The late Dr. Fowler found the most beneficial effects from the use of arsenic in the form of solution in this fever, as well as in intermittents. From his report, published in the ninth volume of the Medical Commentaries, it appears that he experienced its virtues from repeated trials made of it on himself, having been visited by several attacks of a remittent between the years 1786 and 1791. He took the solution as directed to be prepared under the title of liquor arsenicalis, in doses of from eight to ten drops twice a day, and always experienced the curative effects of the medicine,

during each period of its administration, to be very pointed and successful.

We are also informed by Dr. Ferrier *, that he has employed it in some very dangerous and tedious remittents, and always found it a safe and certain remedy. He observed that it generally lessened, if it did not suspend, the second paroxysm after its being exhibited, and it effected the purpose without producing the slightest disturbance in the habit. To an adult, he usually gave five drops of the saturated solution every four hours, and seldom found it necessary to exceed this dose. The only sensible effects produced by it, Dr. Ferrier tells us, are the removal of the crust on the tongue, the appearance of a sediment in the urine, and increased firmness of the pulse.

Probably it might be best to administer this solution combined with the cinchona, either in substance, decoction, or infusion.—See Intermittents.

Every thing that may have a tendency to bring on a fresh attack of fever is carefully to be avoided during the state of convalescence. A change of air and situation (particularly if it has been low and damp) may have a good effect in expediting the patient's recovery; and if the appetite does not return readily, he may take stomachic bitters with advantage.—See Dyspepsia for these.

Gestation in the open air in wheel carriages is a remedy which has been strongly recommended by Dr. Jackson †, towards the close of the bilious remittent fever of warm climates, as well as of all others which have arisen from infection; and he cites many instances which fell under his treatment and immediate observation, whilst he officiated as physician to the army, both on foreign stations and at home, in which it was employed not only with safety, but with the highest efficacy; particularly so in those where the diseased action had ceased, but where the healthy movement was slow. He observes, that although the good effects of gestation be in themselves conspicuous, they are at the same time much increased by ablutions, by an entire change of clothes, and by frictions, both before the journey is undertaken, and after it is finished.

In seasons and places where this fever is prevalent, it will be advisable, by way of preventive, to take a proper dose of the tinct. cinchonæ composita, about twice a day, but more particularly on an empty stomach in the morning.

CONTINUED FEVERS.

FEVERS of this nature continue for several days with nearly the same violence, having evident exacerbations and remissions daily.

* See the new edition of his Medical Histories and Reflections.

† See his Exposition on applying Cold Water in Fever, p. 398.

SYNOCHUS, OR SIMPLE CONTINUED FEVER.

SYNOCHA and Typhus, blended together in a slight degree, seem to constitute this species of fever, as has before been observed; the former being apt to preponderate at its commencement, and the latter towards its termination. It becomes contagious where cleanliness and a proper ventilation are neglected, and is of more frequent occurrence in this country than any other kind of fever.

Every thing which has a tendency to enervate the body, may be looked upon as a remote cause of fever; and accordingly, we find it often arising from great bodily fatigue, too great an indulgence in sensual pleasures, violent exertions, intemperance in drinking, and errors in diet; and now and then, likewise, from the suppression of some long-accustomed discharge. Certain passions of the mind (such as grief, fear, anxiety, and joy) have been enumerated among the causes of fever, and in a few instances it is probable they may have given rise to it; but the concurrence of some other power seems generally necessary to produce this effect. The most usual and universal cause of this fever is the application of cold to the body, giving a check to perspiration; and its morbid effects seem to depend partly upon certain circumstances of the cold itself, and partly upon certain circumstances of the person to whom it is applied.

The circumstances which seem to give the application of cold a due effect, are, its degree of intensity; the length of time which it is applied; its being applied generally, or only in a current of air; its having a degree of moisture accompanying it; and its being a considerable or sudden change from heat to cold.

The circumstances of persons rendering them more liable to be affected by cold, seem to be debility, induced either by great fatigue or violent exertions; by long fasting; by the want of natural rest; by severe evacuations; by preceding disease; by errors in diet; by intemperance in drinking; by great sensuality; by too close an application to study, or giving way to grief, fear, or great anxiety; by depriving the body of a part of its accustomed clothing; by exposing any one particular part of it while the rest is kept in its usual warmth; or by exposing it generally or suddenly to cold when heated much beyond its usual temperature: these we may therefore look upon as so many causes giving an effect to cold, which it otherwise might not have produced.

Another frequent cause of fever seems to be, the breathing air contaminated by the vapour arising either directly or originally from the body of a person labouring under the disease. A peculiar matter is supposed to be generated in the body of a person affected with fever; and this floating in the atmosphere, and being applied to one in health, will, no doubt, often cause fever to take place in him; which has induced many to suppose that this infec-

THE NATURE OF FEBRILE DISEASES.

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tious matter is produced in all fevers whatever, and that they are all more or less contagious.

The effluvia arising from the human body, if long confined to one place without being diffused in the atmosphere, and proper cleanliness and free ventilation are not sufficiently attended to, will, it is well known, acquire a singular virulence; and will, if inhaled or applied to the bodies of men, become a cause of fever. This happens frequently in typhus.

Exhalations, arising from animal or vegetable substances in a state of putrefaction, have been looked upon as another general cause of fever; marshy or moist grounds, acted upon by heat for any length of time, usually send forth exhalations which prove a never failing source of fever.

Marsh miasma, as these exhalations are usually termed, have, undoubtedly, the peculiar effect of inducing fever on human bodies, exposed under certain conditions to their influence. From their denomination, it is too commonly understood that marshes are the only sources whence these exhalations arise; but they also proceed from moist earth, slime, mire or mud, in a great variety of situations and climates of inhabited, as well as unfrequented and uncultivated tracts of country, in almost every quarter of the globe. They are more powerful, concentrated, and virulent in hot climates and in warm seasons, than in temperate ones. It further appears, that the types, or periodical evolutions of the fever which they excite, are chiefly governed by the degrees of concentration which these exhalations possess; the type being more continued and less intermittent or remittent, in proportion to the power of the exhalation.

Numerous are the writers, who, for upwards of a century, have successively exerted their talents in pointing out what each conceived to be the proximate cause, or essential nature of fever; some supposing it to consist in a noxious matter, introduced into, or generated in the body, the increased action of the heart and arteries being an effort of nature to expel this morbid matter; others offering it as their opinion, that it consisted in an increased secretion of bile; and others, again, that it is to be attributed to a spasmodic constriction of the extreme vessels on the surface of the body, which, indeed, was the doctrine taught by the late Dr. Cullen. A modern writer*, however, tells us, that the local and primary seat of idiopathic fever is in the brain, and that it is nothing more or less than a species of phrenitis, or topical inflammation of the brain.

Dr. Currie supposes debility of a peculiar kind to be the first operation of the remote cause producing fever; the necessary consequence, or concomitant effect, is, he thinks, a spasm or contraction of the arteries, but more especially of the extreme vessels and capillaries of the surface: hence follows an accumulation of

* See Inquiry into the Seat and Nature of Fever. by H. Clutterbuck, M.D.

blood on the heart and lungs, the re-action of these organs, the separation of morbid heat, and morbid association. The ground of this theory is, indeed, nearly the same with that of Dr. Cullen ; resting, however, more fully on morbid heat, and admitting into the chain of operation an appendage of morbid association.

To investigate these different hypotheses, would lead me into a train of theoretical and vague reasoning, inconsistent with the plan of this publication ; I shall, therefore, proceed to point out the manner in which fevers usually come on, barely observing, that the proximate cause of fever is by no means, as yet, satisfactorily ascertained, and that it is a disease, the whole of the appearances of which have not been accounted for*.

An attack of synochus is generally marked by the patients being seized with a considerable degree of languor or sense of debility, together with sluggishness in motion, and frequent yawning and stretching ; the face and extremities at the same time become pale, and the skin over the whole surface of the body appears constricted : he then perceives a sensation of cold in his back, passing from thence over his whole frame ; and this sense of cold continuing to increase, tremors in the limbs and rigors of the body succeed. With these, there is a loss of appetite, want of taste in the mouth, slight pains in the head, back, and loins, and a small and frequent respiration.

The sense of cold and its effects, after a little time, become less violent, and are alternated with flushings, and at last, going off altogether, they are succeeded by great heat diffused generally over the whole body ; the face looks flushed ; the skin is dry, as likewise the tongue ; universal restlessness prevails, with a violent pain in the head, oppression at the chest, sickness at the stomach, and an inclination to vomit. There is likewise great thirst and costiveness ; and the pulse is full and frequent, beating, perhaps, 90, 100, or 120 strokes in a minute. When the symptoms run very high, and there is a considerable determination of blood to the head, delirium will arise. In this fever, as well as most others of the continued kind, there is generally an increase of the symptoms towards evening.

If the disease is likely to prove fatal, either by its long duration, or by the severity of its symptoms, then a starting of the tendons, picking at the bed-clothes, involuntary discharges by urine and stool, coldness of the extremities, and hiccups, will be observed : where no such appearances take place, the disease will go through its course, and at length cease.

As a fever once produced will go on, although its cause be entirely removed, there can be no certainty as to its duration ; and it is only by attending to certain appearances or changes, which usually take place on the approach of a crisis, that we can form any opinion or decision on this head. It has, moreover, been

* See Dissertation on Fever, by Dr. George Fordyce.

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asserted by some of our eminent teachers of medicine, but more particularly by Dr. Cullen and Dr. George Fordyce*, that the continued or fresh cause of fever neither will increase that which is already produced, nor occasion a new one: but the soundness of this doctrine I am much inclined to doubt; for, although a fever will run its course, notwithstanding the cause which gave rise to it has ceased to exist, still the reiterated application of the cause, or continuance within the range of its influence, may, I think, signally exasperate the fever in its progress.

The symptoms pointing out the approach of a crisis, are, the pulse becoming soft, moderate, and near its natural speed; the tongue losing its fur and becoming clean, with an abatement of thirst; the skin being covered with a gentle moisture, and feeling soft to the touch; the secretory organs performing their several offices, and the urine depositing flaky crystals of a dirty red colour, and becoming turbid on being allowed to stand any time.

Many physicians have been of opinion, that there is something in the nature of all acute diseases, except those of a putrid kind, which usually determines them to be of a certain duration; and, therefore, that these terminations, when salutary, happen at certain periods of the disease rather than at others, unless disturbed in their progress by an improper mode of treatment, or the arising of some accidental circumstances.

These periods are known by the appellation of critical days, and, from the time of Hippocrates down to the present, have been pretty generally admitted. The truth of them, I think, can hardly be disputed, however they may be interrupted by various causes. A great number of phenomena shew us, that both in the sound state and the diseased, nature has a tendency to observe certain periods: for instance, the vicissitudes of sleeping and watching, occurring with such regularity to every one; the accurate periods that the menstrual flux observes, and the exact time of pregnancy in all viviparous animals, and many other such instances that might be adduced, all prove this law.

With respect to diseases, every one must have observed the definite periods which take place in regular intermittents, as well those universal as topical, in the course of true inflammation, which at the fourth, or at the farthest the seventh day, is resolved, or after this period changes either into abscess, gangrene, or scirrhus: in exanthematous eruptions, which, if they are favourable and regular, shew themselves on a certain and definite day; for example, the small-pox about the fourth day. All these appear to be founded on immutable laws, according to which the motions of the body in health and in disease are governed.

The days on which it is supposed the termination of continued fevers principally happens, are the third, fifth, seventh, ninth, eleventh, fourteenth, seventeenth, and twentieth.

* See his Treatise on Simple Fever.

Simple continued fever terminates always by a regular crisis in the manner before mentioned; or from the febrile matter falling on some particular parts, it excites inflammation, abscess, eruption, or destroys the patient.

Great anxiety, loss of strength, intense heat, stupor, delirium, irregularity in the pulse, twitchings in the fingers and hands, picking at the bed-clothes, startings of the tendons, hiccups, involuntary evacuations by urine and stool, and such-like symptoms, point out the certain approach of death. On the contrary, when the senses remain clear and distinct, the febrile heat abates, the skin is soft and moist, the pulse becomes moderate and is regular, and the urine deposits flaky crystals, or becomes turbid on cooling, we may then expect a speedy and happy termination of the disease.

It sometimes happens that the fever does not affect every part of the system equally; the symptoms being less severe in one part of it than in another. This, which the young and inexperienced practitioner, and the by-standers in a much greater degree, are apt to think fortunate for the patient, is in fact the very reverse, as has been very judiciously observed by Dr. Fordyce*; there being nothing more dangerous in fever than its not affecting every part of the system in an equal degree.

The usual appearances which are to be observed on dissection of those who die of this fever, are congestion, or an affusion within the cranium, and topical affections, perhaps, of some of the viscera.

In fever all motion of the body should be avoided, especially that which requires the exercise of the muscles; the patient ought therefore to be confined to his bed. The exercise of the mind proving a stimulus to the body, all impressions which lead to thought, especially those which may excite emotion or passion, are to be carefully shunned. A person labouring under a fever ought, therefore, to be kept as composed and quiet as possible; and his chamber should not be close and warm, as is too usually the case, but, on the contrary, perfectly cool and sufficiently ventilated: taking care, however, that the air does not come in a direct stream or current upon him. He is likewise to be lightly covered with bed-clothes.

The strict pursuance of an antiphlogistic regimen will be highly necessary to be observed in this fever, as well as in some others of the continued kind. That sort of aliment which gives the least stimulus will be the most proper: the food should be light, nourishing, and easy of digestion, consisting of preparations of barley, oatmeal, sago, vermicelli, tapioca, and the meal of Indian arrow-root, varying them now and then for panado, roasted apples, &c. Animal broths produce an increase of heat in the body, and are therefore improper, unless the patient is in a state of

* See his Fifth Dissertation on Fever.

convalescence. For drink, he may take barley water, linseed tea, toast and water, milk whey, thin gruel, and lemonade; which may be varied now and then for an infusion of balm, and such other herbs, carefully shunning the use of any kind of spirituous or fermented liquor.

In fever, it is no uncommon occurrence for peculiar longings to arise; and when they do, should always be gratified in moderation, although they may seem not altogether proper.

The stomach, and the rest of the alimentary canal, are manifestly affected in many cases of fever in a higher degree than other parts of the body, and therefore emetics and purgatives are usually the first means which present themselves to the notice of the physician. In fever it will, therefore, be necessary to pay an early attention to the state of the stomach; and if there are any crudities or corrupted humours producing nausea or vomiting, to dislodge them by administering a gentle emetic *. To assist its operation, the patient should drink freely of lukewarm water, or an infusion of camomile flowers.

To remove the feculent contents of the bowels, some gentle laxative † may be taken; and throughout the remainder of the disease the body should be kept open, if necessary, by a repetition of some such medicine, administered as the occasion may require, or by means of aperient clysters ‡. Where the disorder seems to have arisen from, or to be kept up by, a redundant secretion of bile, mild purgatives will be still more highly necessary; and, perhaps, the submuriate of mercury, joined with a few grains of jalap or cathartic extract, may best answer our purpose. Purgative medicines are sometimes combined with antimonials ||.

* 1. R Pulv. Ipecac. gr. xv.

Antimon. Tartarizat. gr. j.
Aq. Ment. Virid. f. ℥jss. M.

ft. Haustus emeticus.

† 2. R Potassæ Tartrit. ℥ss.

Mannæ Optim. ℥j.

Aquæ Fervent. f. ℥iij.

— Cinnam. f. ℥ss. M. ft.

Solutio, ejus sumat dimidium, et repetatur dos. post horas duas, nisi alvus prius respondeat.

‡ 3. R Sodæ Sulph. ℥ss.

Decoct. Malvæ Composit. f. ℥xij.

Olei Olivæ, f. ℥ss. M.

ft. Enema.

|| 4. R Hydrargyri Submuriat. gr. v.

Pulv. Antimonial. gr. j.—ij. M.

ft. Pulvis.

* 1. Take Powdered Ipecacuanha, fifteen grains.

Tartarized Antimony, one grain.
Mint Water, one ounce and a half.

Mix these for an emetic draught.

† 2. Take Tartrate of Potass, half an ounce, Manna one ounce.

Warm Water, three ounces.

Cinnamon Water, half an ounce.

Mix them, and of the solution take the half for a dose; which repeat after two hours, unless the bowels are sufficiently acted upon by the former.

‡ 3. Take Sulphate of Soda, half an ounce. Compound Decoction of Mallow, twelve ounces.

Olive Oil, half an ounce.

Mix them for an aperient clyster.

|| 4. Take Submuriate of Mercury, five grains.

Antimonial Powder, from one to two grains.

Mix them.

In the simple continued fever, it will seldom be necessary to have recourse to the lancet, particularly in warm climates; but should the disease have arisen in a young person of a plethoric habit, and the attack of fever have been severe, with considerable flushing of the face, redness of the eyes, intense pain in the head, or delirium, and a full, hard, and obstructed pulse, or should there be symptoms of congestion in some important organ, we may then advise the taking away eight or ten ounces of blood from the arm. This quantity should be drawn off at once from a large orifice, and not by repeated bleedings, as by the former mode there will be a greater temporary but less permanent weakness induced by the evacuation. For the purpose of removing any pain of the head, the application of a few leeches to the forehead and temples will, in many cases, be quite sufficient; and where these are not to be procured, a blister on the nape of the neck may be found a valuable substitute.

By bleeding unnecessarily at the commencement of this fever, such a degree of weakness may be induced as, added to the depression of strength which arises in its progress, might produce symptoms of putrefaction in the second or third week of the disease, so as to prove fatal. By neglecting to bleed, however, when the pulse is full, hard, and quick—the respiration hurried, breath hot, skin dry, and the head highly painful, we shall commit a dangerous error, and endanger the life of the patient.

It has been considered by some physicians of eminence*, that the best time of drawing blood is in the evening, during the febrile paroxysm; as the patients then bear it better, and the relief the next day is always observed to be more effectual and permanent.

Bleeding in fevers is strongly recommended by a late writer†, and he seems to value it far more highly than any of his cotemporaries. In malignant fevers it has generally been considered as nearly inadmissible; but even in these, as well as the fevers of tropical climates, he deems it, on many occasions, to be an essential part of the preparation for his curative means. It is necessary, however, to observe, that he by no means considers bleeding as a debilitating process. Its effects, he says, are stimulative, relatively according to the circumstance of the subject; and they are extensive, for they are felt in all parts of the circulating system, and consequently through the whole extent of the animated machine. The abstraction of blood, by its express effect, diminishes the quantity of a body to be moved; and therefore, increases the power of the mover: it thus facilitates motion; but this, we are told, is not all. The diminution of the quantity of blood, and change of movement in consequence of such diminution, is in some manner

* See the Works of Drs. Armstrong, Perceval, and Cheyne.

† See Dr. Jackson's Appendix to his Remarks on the Constitution of the Medical Department of the British Army.

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productive of a change of condition at the sources of life: motion is effected, changed, even suspended; diseased motions are arrested; an opportunity is thereby furnished for the more effective action of those powers, which are provided and expressly calculated for the stimulation of the due action of health. Bleeding, as it is the most manageable power, so it possesses the most absolute influence over animal movement, either as directly effective of a final purpose, or as preparatory to the action of other means necessary to insure the final purpose.

Such is Dr. Jackson's mode of reasoning; and although plausible, still I conceive there will be found few among our modern physicians who will be ready to adopt his practice, but particularly those whose patients compose the higher classes in life, and whose enervated frames are ill calculated to bear copious depletion by venesection. The stout, robust, and hardy British soldier and seaman (who, indeed, bear phlebotomy better than any class of people in private life) may undergo such a discipline with less injurious effects, and in cases of severe attacks, may undoubtedly require a free use of the lancet; but surely the remedy in question cannot be so universally necessary as Dr. Jackson supposes. He moreover tells us* that a certain condition of susceptibility is necessary to insure the action of whatever means we may employ in fever; and that where this does not exist naturally, it must be excited artificially, which is to be accomplished in some degree by applying fomentations to the legs and feet; or by immersing the lower parts, and even the whole of the body, in a warm bath, but principally by subtracting blood from a vein, the quantity of which is to be measured according to the circumstances of the case, and the effect which arises in the course of the progress, and not by any preconceived opinion of what may be sufficient; for few, he observes, can be supposed to possess such a knowledge of the nature of things, as to be capable of measuring it with exactness in the prescription-book. The effect to be looked for, and which is to decide the measure of the quantity, he notices, implies a remission of pains of all denominations, relaxation of the skin, freedom in all the secretory functions, and a change in the condition of the pulse, which, instead of being hard, tense, and tumultuously agitated, becomes free, open, and regular. Dr. Jackson is at the same time ready to admit, however, that many instances occur where the action of the fever is not principally manifested in the circulating system, either by increase or defect of action; consequently, where bleeding is not the remedy of chief dependence.

If great heat with much thirst prevail, refrigerant medicines may be taken with advantage; and the most useful of this class is

* See his Exposition on the Practice of applying Cold in Fevers.

the nitrate of potass, which may either be joined with others*, or be added to whatever the patient uses for common drink†.

Acids of all kinds, when sufficiently diluted, are refrigerant remedies, well adapted to continued fevers. Those most in use are the sulphuric, muriatic, and vegetable; but more particularly the latter, such as the acid of tamarinds, oranges, lemons, mulberries, &c. As a refrigerant, cold water may likewise be drunk.

For the purpose of arresting the febrile course, and moderating or abstracting the morbid excess of heat, and restoring a healthy action, cold bathing has of late years been much employed in fevers. The practice of bathing in fevers appears, indeed, to be of great antiquity, for its use and management were well known to Galen, and are well defined by him. It farther appears, by the relation of travellers, to have been long used by several of the eastern nations. We have likewise indisputable proof that cold affusion had long ago been employed by Dr. Wright of Jamaica, and some other physicians in the West Indies, particularly by Dr. Jackson. The notice which this remedy has attracted in England, has certainly, however, been owing to the popular manner in which the subject has been treated by the late Dr. Currie of Liverpool. For the safest time, and most advantageous mode of employing cold affusion in fevers, I beg leave to refer the reader to the admonitions given under the heads of Typhus Mitior and Typhus Gravior. Under the present, I will only observe, that affusion with cold water, either by means of a large watering pot, so as to allow the streams to pour on the head and shoulders with some force, or by dashing it out of a pail, may be boldly and fearlessly resorted to at the commencement of the greater number of fevers of every climate, where no catarrhal symptoms or inflammatory affection of the lungs are present; but in the advanced stages, or latter periods of most, and where there is much debility, this remedy should be adopted with due caution, and a careful consideration of the attendant circumstances.

With a view to determine the circulation to the surface of the body, it will be right to resort to an early use of such medicines as possess this peculiar power. To excite a perspiration, it will in many cases be sufficient only to make the patient lie abed, and drink plentifully of diluting liquors; but should these simple

* 5. R Succī Limon. f. ℥ss.
Potassæ Subcarbon. ʒj. vel q. s.

Ad ejus saturationem, dein adde,

—— Nitrat. gr. x.

Aq. Fontan. f. ℥j.

Syrup. Violæ, f. ʒj. M.

ft. Haustus, 3tia quaq. hora sumendus.

† 6. R Decoct. Hordei, Oij.

Potassæ Nitrat. ʒij.

ft. Potus.

* 5. Take Lemon Juice, half an ounce.
Subcarbonate of Potass, one
scruple, or a sufficiency.

After being saturated, add
Nitrate of Potass, ten grains.
Pure Water, one ounce.
Syrup of Violets, one drachm.

Mix them, and let the draught be taken
every three hours.

† 6. Take Decoction of Barley, two pints.
Nitrate of Potass, two drachms.

Mix them for ordinary drink.



means not prove efficacious, it will then be necessary to resort to more powerful agents.

Neutral salts, when taken into the stomach, soon produce a sense of heat on the surface of the body; and if it be covered close, and kept moderately warm, a gentle sweat is often readily brought on. These, therefore, being possessed of the power of determining to the surface, are highly useful in fever, and may be prescribed as in the under-mentioned forms *.

Emetic medicines, and particularly antimonials, given in small nauseating doses, have likewise a similar power of determining the circulation to the surface of the body, and of producing symptoms similar to those which take place in the crisis of fever: these are therefore advisable. They may either be combined with those of the before-mentioned class, or be given by themselves†. From

* 7. R Ammon. Subcarbonat. gr. x.

Succi Limon. f. ℥ss.

Aq. Menth. Virid. f. ℥j.

Tinct. Lav. Comp. ℥ vi.

Syr. Althææ, f. 3ij. M.

ft. Haustus.

Vel,

8. R Succi Limon. f. ℥jss.

Potassæ Subcarbon. 3j. vel q. s. ad.

Ejus saturat. dein adde

Aq. Menth. f. ℥j.

— Fontan. f. ℥iij.

Antim. Tartarizat. gr. jss. ad ij.

Syrup. f. 3ij. M.

ft. Mistura, cujus capiat cochl. ij. magna tertiis horis.

Vel,

9. R Liquor. Ammon. Acetatis,

Aquæ Cinnam. aa f. ℥ss.

— Fontan. f. 3vi.

Vini Antimon. Tart. ℥ x.

Spirit. Ætheris Nitrici, f. 3ss. M.

ft. Haustus, 3tia quaq. hora sumendus.

† 10. R Pulv. Antim. gr. j. ad iij.

Confect. Rosæ, gr. vj. M.

ft. Bolus, 4tis horis sumendus.

Vel,

11. R Pulv. Jacob. Ver. gr. v. pro dos.

Vel,

12. R Pulv. Ipecacuanhæ, gr. iij.

* 7. Take Subcarbonate of Ammonia, ten grains.

Lemon Juice, half an ounce.

Mint Water, one ounce.

Compound Tincture of Lavender, ten drops.

Syrup of Marshmallow, two drachms.

Mix them for a draught.

Or,

8. Take Lemon Juice, one ounce and a half.

Subcarbonate of Potass, about a drachm.

After the effervescence has ceased, add—

Mint Water, one ounce.

Pure Water, three ounces.

Tartarized Antimony, from one grain and a half to two grains.

Common Syrup, two drachms.

Mix them, and let the patient take two large spoonful every three hours.

Or,

9. Take a solution of Acetate of Ammonia, Cinnamon Water, of each half an ounce.

Pure Water, six drachms.

Wine of Tartarized Antimony, fifteen drops.

Spirit of Nitric Æther, half a drachm.

Mix them, and give this draught every three hours.

† 10. Take Antimonial Powder, from one to three grains.

Confection of Roses, six grains.

Make them into a bolus, to be taken every four hours.

Or,

11. Take James's Powder, five grains for a dose.

Or,

12. Take Powdered Ipecacuanha, three grains.

the uncertainty with which Dr. James's Powder and the pulvis antimonialis act, the tartarized antimony may be considered as preferable in many cases.

To increase the diaphoretic effect of these medicines the patient should take frequent small draughts of some tepid liquor.

Warm bathing, and fomenting the lower extremities, are remedies sometimes employed in fever to produce moderate sweating. Where these relieve delirium, induce sleep, and are easily borne by the patient, we may be assured of their propriety. Sweating, however, when excited in fevers by stimulant, heating, and inflammatory medicines, is almost sure to prove hurtful. It likewise proves injurious, when excited by much external heat: as also where, instead of relieving, it rather increases the frequency and hardness of the pulse, the anxiety and difficulty of breathing, the headach, and delirium. When sweating is partial, and confined to the superior parts of the body, it will be more likely to prove hurtful than salutary.

If a cough accompanies the fever, and a rawness and soreness in the fauces, together with a tightness at the chest, are present, then, besides pursuing the antiphlogistic plan before advised, we may give demulcents* in frequent repeated doses.

Should a vomiting arise in the course of this fever, and the irritation prove considerable, a saline draught may be taken in the act of effervescence, or it may be administered so as that this shall take

Confect. Cort. Aurant. gr. vj. M.

ft Bolus.

Vel,

13. R Antim. Tartarizat. gr. jss.

Aq. Fontan. f. ℥vj.

Syrup. Croci, ℥j. M.

ft. Mistura, cujus sumat cochl. ij. magna
2da vel 3tia hora.

* 14. R Cetacei, ℥ij.

Vitel. Ovi, q. s. ad solut.

Dein adde

Aquæ Pulegii, f. ℥iv.

Aceti Scil. f. ℥ij.

Syrup. Tolutan. f. ℥ijj. M.

ft. Mistura, cujus sumat paululum subinde.

Vel,

13. R Mucil. G. Acaciæ,

Aq. Fontan. aa ℥ijj.

Potassæ Nitræ. ℥j.

Vini Antimon. Tart. ℥xxx.

Syrup. Limon. f. ℥ss. M.

ft. Mistura. Cechl. ij. pro des, tusse urgenti
sumenda.

Confection of Orange Peel, six
grains.

Form them into a bolus, to be taken every
four hours, as the former.

Or,

13. Take Tartarized Antimony, one grain
and a half.

Pure Water, six ounces.

Syrup of Saffron, one drachm.

Of this mixture, give two table spoonfuls
every second or third hour.

* 14. Take Spermaceti, two drachms.

Yolk of an Egg, sufficiency to
dissolve the former.

Then add

Penny Royal Water, four
ounces.

Vinegar of Squill, two drachms.

Syrup of Tolu, three drachms.

Mix them well together, and let the patient
take a mouthful from time to time.

Or,

15. Take Mucilage of Acacia,

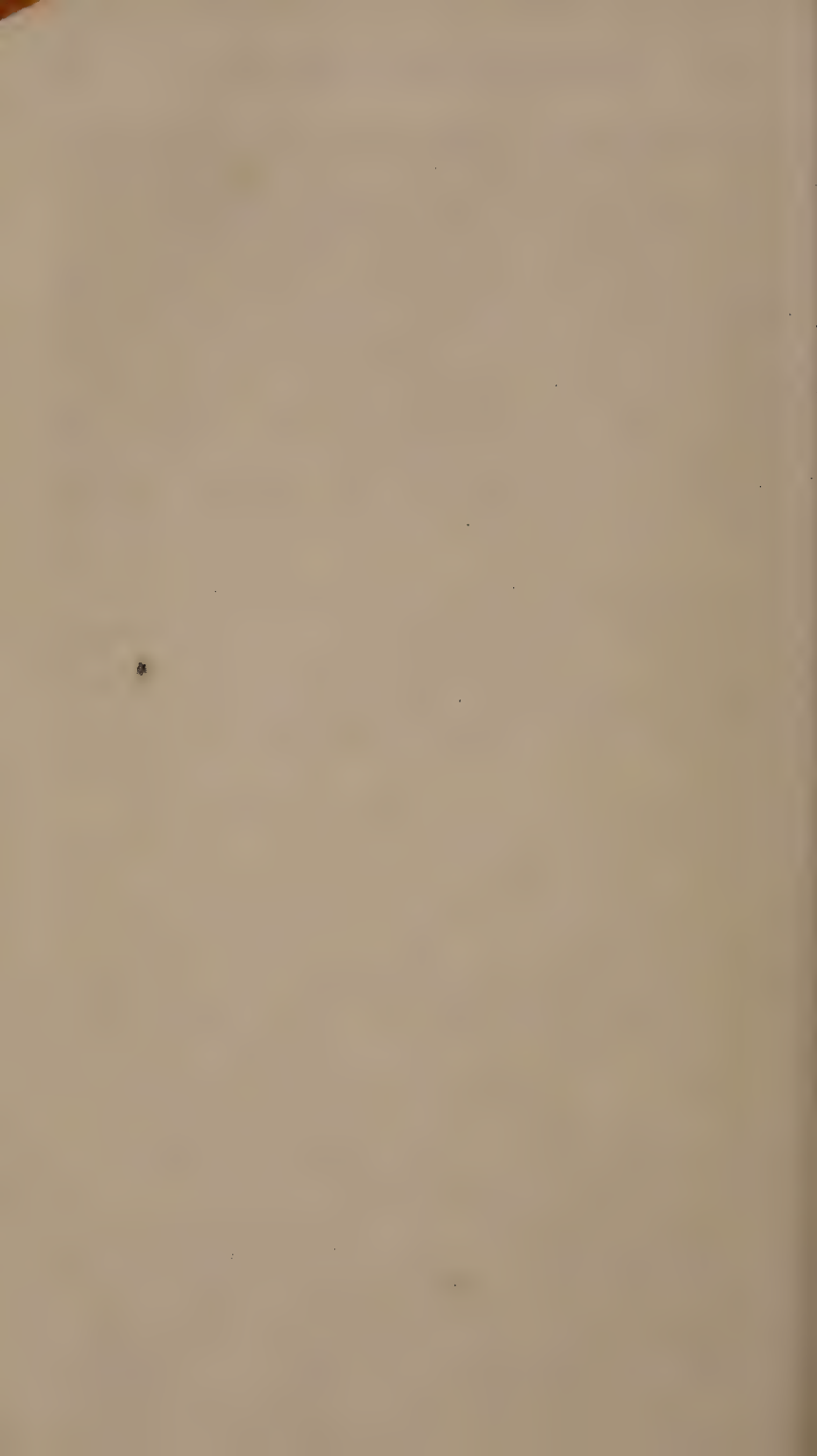
Pure Water, each three ounces.

Nitrate of Potass, one drachm.

Wine of Tartarized Antimony,
forty drops.

Syrup of Lemons, half an ounce.

Mix them, and give about two large spoonfuls
occasionally, or when the cough is
troublesome.



place in the stomach. The manner of doing it is by giving the patient about half an ounce of lemon juice mixt up with a little mint water and syrup, and immediately afterwards, about a scruple of the potassæ subcarbonas, dissolved in an ounce of common water. If the irritation at the stomach is not abated by this means, we may add a few drops of tinctura opii with a little aqua cinnamomi.

In this fever partial evacuations, such as purging and sweating, which have no tendency to prove critical, often arise. When these happen, we should, by all means, put a stop to them. The former may be checked by astringents, as below*, or as advised under the head of diarrhœa; and the latter, by keeping the patient cool, by washing his body frequently with a sponge dipped in cold water, and giving him refrigerants.

We may distinguish critical evacuations from those which are not so, by attending to the appearances which take place in other parts of the system. For instance, if a purging should arise, and the tongue continue foul, and the skin dry, without any abatement of heat and thirst, then we may regard it as by no means critical; but if, on its taking place, the tongue becomes clean and moist, the pulse moderates, the febrile symptoms abate, and the skin has a gentle breathing sweat universally diffused over it, then a crisis may be expected.

In the progress of this fever it sometimes happens that particular parts of the body are much affected, and that there prevails either great oppression of breathing, or that violent pains in the head, stupor, or delirium ensue. In all such cases, the application of a blister near the part affected will be proper, and relief will often be quickly procured by it. Where there is any unusual coldness of the extremities, with a sinking pulse, blisters to the inside of the legs will likewise prove highly serviceable. Their efficacy in such cases may be increased by the application of stimulating cataplasms† to the soles of the feet and palms of the hands. Camphor, ammonia, musk, and æther, are remedies which may be used at the same time, either separately or combined together; and the patient should be allowed a liberal use of wine, both in a diluted and undiluted state.

When we administer camphor, in this or any other disease, in a

* 16. R Confect. Aromat. ʒij.

Aq. Cinnam. f. ʒj.

— Fontan. f. ʒij.

Tinct. Catechu, f. ʒij. M.

f. Mistura ejus sumat Coch. ij. magna post singulas sedes liquidas.

† 17. R Seminum Sinapeos Crass.

Medullæ Panis, aa ℥ss.

Aceti quantum satis sit. M. et fiat Cataplasma.

* 16. Take Aromatic Confection, two drachms.

Cinnamon Water, one ounce.

Pure Water, three ounces.

Tincture of Catechu, two drachms.

Mix them, and let two table spoonsful be taken after every liquid stool.

† 17. Take Bruised Mustard Seed,

Crumb of Bread, each half a pound.

Vinegar, a sufficiency to form the whole into a Cataplasma.

liquid form, in order to render it properly diffusive in water, and obtain its full effect, we should (instead of trusting to the *mistura camphoræ* of the London Dispensatory, which contains but a small proportion of the resin) dissolve it in a little rectified spirit, or expressed oil, and then triturate it well with mucilage of gum *acacia* previous to adding the water. By triturating camphor with milk, it is nearly as readily dissolved as with rectified spirit. The *mistura camphorata* may be prepared agreeably to the annexed prescription *, and none of the camphor will be lost by precipitation.

Severe pains in the head, accompanied with a throbbing of the arteries, or any degree of delirium, and which have not been subdued by leeches to the temples, or a blister to the nape of the neck, may sometimes be relieved by the application of linen rags, moistened in cold evaporating fluids (such as water, with an addition of *æther* or vinegar) to the forehead or shaven scalp. Under this cooling process I have known tranquillity and sleep succeed to restlessness in the course of a few hours.

In *synochus* there is often a great interruption to sleep; and the more violent the fever, the greater in general is the interruption. It is unfortunate, however, that it cannot be procured with safety to the patient, as opium proves generally prejudicial in all fevers, except those of the typhous kind. To procure rest, therefore, in that which I am treating of, we must be contented in directing him to be kept as still and quiet as possible. If necessity obliges us to a use of sedatives, the *spiritus ætheris nitrici*, and Hoffman's liquor, will be the least exceptionable.

Where this fever is kept up merely by weakness and irritability, opium, given in small doses, may be proper. If it is found to procure refreshing sleep, the dose may be repeated the ensuing night; but if the rest has been much disturbed, its use ought to be discontinued.

By introducing opium into the system by means of friction, as advised under the head *Cholera Morbus*, it possibly might not be attended with any injurious effect. In this fever, as well as in all others, where we wish to procure sleep, and cannot have recourse to opium, on account of delirium being present, we may employ some of the preparations of the hop, or *humulus lupulus*, such as its extract or tincture. *Hyoscyamus* is now and then given under similar circumstances with benefit.

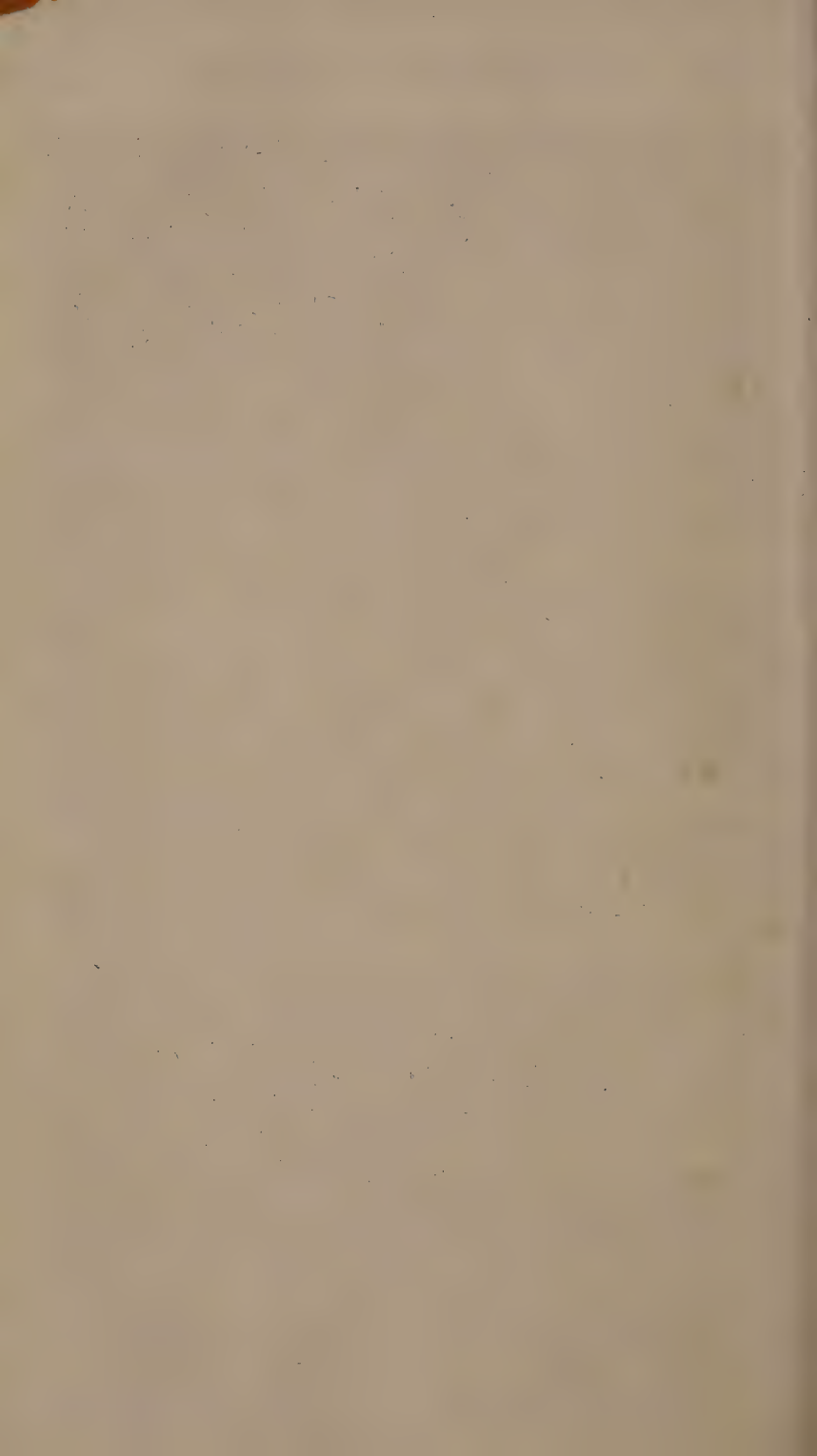
This fever, is, in some instances, continued and kept up solely by debility, as has been just mentioned. In such cases, if the symptoms are mild, we may venture to prescribe a use of the *cinchona bark*; and as it will be more likely to sit easy on the

* 18. R. Camphoræ, ʒss. solv. in
Lactis Vaccinæ, ʒij. dein adde

Aq. Puræ, ʒvi. f. M.
ft. Mistura.

* 18. Dissolve Camphor, half a drachm, in
Fresh Milk, two ounces, then
add

Pure Water, six ounces.
Mix them together.



stomach in the form of decoction* or infusion†, these preparations of it will here be preferable to giving it in substance. If, on a trial, the patient sleeps well, breathes easily, and does not find any increased heat, we may then venture to go on with it; but if, on the contrary, it produces restlessness, difficulty of breathing, &c., its use should be omitted.

In the continued fevers of warm climates, we should by no means wait for a complete crisis, in order to administer the bark of cinchona. In these it will be prudent to embrace even the least remission, let it be ever so imperfect, or of short duration; as likewise to give it in as large doses as the stomach will bear, and to repeat these frequently. The same attention must, however, be paid to the effects it produces, as have been mentioned, or may hereafter be noticed.

In cold climates it is usual to wait for a regular intermission before the cinchona is given. As a tonic, this medicine has acquired the greatest celebrity in all febrile cases, and is, therefore, usually preferred to all others; its effects are evidently more obvious when given in substance, than in any other form. About a drachm of the powder is a common dose, and this may be repeated every two or three hours, according to the exigency of the case. Ten or twelve drops of the acidum sulphuricum dilutum may be added to each dose. The bark of cinchona is apt, at first taking it, to affect the bowels, and pass off by stool with many people. When this happens, five or six drops of the tinctura opii, or about half a drachm of the tinctura catechu, or that of kino, may be added to each dose.

With some persons the cinchona bark will not sit easy on the stomach almost in any shape. In such cases we may substitute the use of quassia‡, or any of the other astringent bitters noticed under the head of Intermittents.

* 19. R Cort. Cinchonæ Contus, ʒi.

Aq. Fontan. Ojss.

Coque add Oj. Col. dein adde

Tinct. Calumbæ, f. ʒj. M.

ft. Decoctum, de quo sumat cochl. iij. magna quartis horis.

† 20. R Cort. Cinchonæ in pulv. trit. ʒss.

Aq. Bullient. f. ʒvj. post horam

Colat. adde

Tinct. Cort. Aurant. f. ʒij. M.

ft. Infusum, cujus sumat cochl. iij. tertiis horis.

‡ 21. R Quassia, ʒij.

Aq. Bullient. f. ʒvj. post horam

Colat. adde

* 19. Take Peruvian Bark bruised, one ounce.

Pure Water, one pint and a half.

Boil these slowly till reduced to one pint, then strain off the liquor, and add

Tincture of Calumba one ounce.

Mix them, and of the decoction let three table spoonsful be taken every four hours.

† 20. Take Peruvian Bark, reduced to a coarse powder, half an ounce.

Boiling Water, six ounces.

Infuse them for an hour, strain off the liquor, and add

Tincture of Orange Peel, two drachms.

Mix them, and let three table spoonsful be taken every three hours of this infusion.

‡ 21. Take Quassia, two drachms.

Boiling Water, six ounces.

Strain off the liquor after one hour's infusion, and add

On a recovery from fever the patient should cautiously avoid any fatigue, exposure to cold, or improper food. As restoratives, a generous diet, with a moderate use of wine, will be serviceable; and if the season of the year will admit of cold bathing, it will likewise be advisable. A change of air, with moderate daily exercise, either in a carriage or on horseback, will prove powerful auxiliaries in enabling the convalescent to regain his strength. Where the appetite is defective, we may prescribe, stomachic bitters.—See Dyspepsia.

SYNOCHA, OR INFLAMMATORY FEVER.

SYNOCHA is a fever with much increased heat; a frequent, strong, and hard pulse; the urine red: the animal functions but little disturbed, although at an advanced stage the sensorium is apt to become much affected. We may readily distinguish synocha from either typhus mitior or typhus gravior by its being attended with symptoms of an inflammatory nature. It makes its attack at all seasons of the year, but is most prevalent in the spring; and it seizes persons of all ages and habits, but more particularly those in the vigour of life, with strong elastic fibres, and of a plethoric constitution. It is a species of fever almost peculiar to cold and temperate climates, being rarely met with in very warm ones, except among Europeans lately arrived; and even then the inflammatory stage is of short duration, as it soon assumes the typhoid type.

The exciting causes are, sudden transitions from heat to cold, the application of cold to the body when warm, swallowing cold liquors when much heated by exercise, too free a use of vinous and spirituous liquors, great intemperance, violent passions of the mind, exposure to the rays of the sun, topical inflammation, the suppression of habitual evacuations, the drying up of old ulcers, and the sudden repulsion of eruptions. It may be doubted if this fever ever originates from personal infection; but it is possible for it to appear pretty generally among such as are of a robust habit, from a peculiar state of the atmosphere.

It comes on with a sense of lassitude and inactivity, succeeded by vertigo, rigors, and pains over the whole body, but more particularly in the head and back; which symptoms are shortly followed by redness of the face, throbbing of the temples, great restlessness, intense heat, and unquenchable thirst, oppression of breathing, and nausea. The skin is dry and parched; the eyes

Tinct. Calumb.

— Card. Compos. aa f. ʒss.

ft. Mistura, cojus capiat Cochl. ij. tertiis
horis cum Acidi Sulphur. Diluti ℥ x.

Tincture of Calumba,
Compound Tincture of Carda-
moms, each half an ounce.

Mix them, and take two table spoonfuls
every three hours, with fifteen drops of
Diluted Sulphuric Acid.

appear inflamed, and are incapable of bearing the light; the tongue is of a scarlet colour at the sides, and furred with white in the centre: the urine is red and scanty; the body is costive; and there is a quickness, with a fulness and hardness in the pulse, not much affected by any pressure made on the artery. Its pulsations are from 90 to 130 in a minute; and when blood is drawn, it exhibits a yellowish or buffy crust on its surface, which is the coagulable lymph or fibrin. If the febrile symptoms run very high, and proper means are not used at an early period, stupor and delirium come on at a more advanced stage; the imagination becomes much disturbed and hurried, and the patient raves violently.

The disease usually goes through its course in about fourteen days, and often terminates critically, either by a diaphoresis, diarrhœa, hæmorrhage from the nose, or the deposit of a copious sediment in the urine; which crisis is usually preceded by some variation in the pulse. In many instances it, however, terminates fatally.

Our judgment, as to the termination of the disease, must be formed from the violence of the attack, and the nature of the symptoms. If the fever runs high, or continues many days, with great action of the heart and arteries, flushed, turgid face, red eyes, intolerance of light, with vertigo, or early stupor and delirium, the event may be doubtful; but if to these are added, picking at the bed-clothes, startings of the tendons, involuntary discharges by stool and urine, and hiccups, it will then certainly be fatal. On the contrary, if the febrile heat abates, and the other symptoms moderate, and there is a tendency to a crisis, which is marked by a universal and natural perspiration on the body; by the urine depositing a lateritious sediment, and by the pulse becoming more slow or soft; or by a hæmorrhage from the nose; diarrhœa supervening; or the formation of abscesses; we may then expect a recovery. In a few cases, this fever has been succeeded by mania.

On opening those who die of an inflammatory fever an effusion is often perceived within the cranium; and now and then topical affections of some of the viscera are to be observed.

From the symptoms which attend this disease, it is evident our endeavours should be early exerted to avoid the mischief that may ensue from general inflammation; and as evacuation by bleeding is the chief mean we can confide in, it should be resorted to on the first of its attack; and one large bleeding at this period will have a much better effect than repeated small ones afterwards. If the symptoms run high, therefore, and the person is young and plethoric, twelve or sixteen ounces may be drawn off at once from the arm through a large orifice. In repeating the operation, we are to be governed by the effect it produces on the pulse, and by the appearance the blood puts on after standing some time. If the former continues full, strong, and tense, and the latter exhibits a buffy, sizzly coat on its surface, the bleeding should be repeated

by all means, but in smaller quantity than before. Blood-letting relaxes the vascular system, diminishes its action, and takes off plethora. The pulse, in this fever, is apt, however, to become fuller and stronger after bleeding, which may easily be explained; for the plethora may be so great as to distend the vessels beyond their proper tone: in such cases the vessels cannot act fully, and the pulse is contracted; but when the plethora is taken off by copious bleeding, and the vessels are allowed to contract properly, the pulse becomes fuller, which shews that the remedy has been proper, and should induce us to repeat the operation if the case requires it.

It may be difficult to determine whether drawing blood from the temporal artery ought not to be preferred in severe attacks to venesection at the arm. Both, indeed, will relieve the headach, giddiness, and stupor; but I conceive that a more permanent benefit will be derived from the former.

When the fever has been of several days' standing, and the head is much affected either with severe pain or delirium, topical bleeding, by the application of three or four leeches to each temple, may be preferable to any other mode of drawing blood.

Applying linen cloths, wetted in cold water, together with æther or vinegar, to the forehead and temples, or over the shaven scalp, may be attended with some advantage in such cases.

With the view of diminishing inflammation and general excitement, digitalis has been proposed as a remedy in this disease, after having employed proper venesection; and probably it may prove serviceable.

If any nausea prevails at the commencement of the disease, the stomach may be relieved by making the patient drink one or two cupsful of an infusion of the flores anthemidis; but should these simple means not be attended with the desired effect, he may then take a table spoonful of an emetic solution*, every quarter of an hour, until sufficiently eased.

To obviate costiveness, one or two motions should be procured daily, by means either of some aperient medicine†, or by laxative

* 1. R Antimon. Tartarizat. gr. ij.
Aq. Fontanæ, f. ʒij.
Syr. Croci, f. ʒj. M.

† 2. R Pulp. Tamarind. ʒss.
Potassæ Supertartrat. ʒj.

Aq. Bullientis, ʒv.

Colat. adde

Aq. Cinnam. f. ʒj.

Antimon. Tartarizat. gr. j. M.

Sumat Cochl. iv. et repetatur dos. post horas
ijj. nisi alvus prius respondeat.

* 1. Take Tartarized Antimony, two grains.
Pure Water, three ounces.
Syrup of Saffron, one drachm.

Mix them.

† 2. Take Pulp of Tamarinds, half an ounce.
Supertartrate of Potass, two
drachms.

Boiling Water, five ounces;
strain off the liquor, and add

Cinnamon Water, one ounce.

Tartarized Antimony, one grain.

Take four table spoonsful, and repeat the
dose in three hours, should no motions be
procured in that time.



clysters*. In synocha, cathartics, particularly the saline ones, will prove singularly useful. If the stomach is in an irritable state, we can substitute a few grains of the hydrargyri submuriæ, made up into pills, with a small quantity of cathartic extract, instead of the other laxative medicines.

To abate thirst the patient should be directed to drink frequently of diluting liquors, acidulated with lemon juice or potassæ super-tartras. He may likewise take small and frequently repeated doses of the nitrate of potass†; or, as a refrigerant, he may be allowed to drink freely of cold water. For the purpose of moderating or abstracting the morbid excess of heat, various parts of the body should be sponged frequently with cold water. Cool air may be freely admitted also, as it has been found that a person in fever may be kept much cooler than one in health without uneasiness or harm. The acid fruits, such as oranges, &c., will be very proper.

Sudorifics do not appear to be advisable in this fever, as they might bring on profuse sweating; and it is not possible to keep the body warm without producing a considerable increase of heat. The neutral salts may be given in any of the forms advised under the head of Simple Fever, every two or three hours, joined with small nauseating doses of tartarized antimony, or the like. A pediluvium at night may assist their effect.

Should the breathing be oppressed, or should stupor or delirium arise, it will then be right to apply a blister in the neighbourhood of the part so affected. If the pulse sinks, and the extremities become cold, the application of sinapisms to the soles of the feet will be proper. Camphor, æther, ammonia, and cordials, will be proper remedies on such occasions.

In this fever, as in most others, sleep is much interrupted, and from a want of this, delirium often arises: opium here would be an uncertain medicine, for, should it fail to procure rest, the delirium would be greatly increased by it. It should therefore be

Vel,

3. R Infus. Sennæ Compos. f. ℥jss.

Magnes. Sulphat. ℥ij.

Mannæ Optim. ℥j. M.

ft. Haustus aperiens.

* 4. R Infusi Sennæ C. f. ℥xss.

Sodæ Sulphat. ℥j.

Ol. Olivæ, f. ℥ss. M.

ft. Enema.

† 5. R Potassæ Nitrat. ℥ij.

—— Supertart. ℥ij.

Antimon. Tartarizat. gr. jss. M.

ft. Pulvis, in Chart. vj. dividend. Sumat j. dosem tertia hora.

Or,

3. Take Compound Infusion of Senna, one ounce and a half.

Sulphate of Magnesia, three drachms.

Manna, two drachms.

Mix them for an aperient draught.

* 4. Take Compound Infusion of Senna, ten ounces and a half.

Sulphate of Soda, one ounce.

Olive Oil, half an ounce.

Mix them for a clyster.

† 5. Take Nitrate of Potass, two drachms.

Supertartrate of Potass, three drachms.

Tartarized Antimony, one grain and a half.

Mix them, and divide the powder into six doses, of which one is to be taken every three hours.

given only in cases of imminent danger, and even then, only in small doses frequently repeated, paying a strict attention to the effect it produces. In other instances, we should be contented with giving directions for the patient to be kept as quiet as possible.

Probably we might employ some of the preparations of the *humulus lupulus* (hop), or *hyoscyamus*, in this fever with benefit, in lieu of opium. In cases of severe delirium, threatening phrenitis, might not a use of the circular swing, noticed under the head of *Mania*, produce a good effect?

Throughout the whole course of the disease, the patient is to abstain from solid food and animal broths, supporting nature with gruel, and preparations of barley, sago, tapioca, &c.

His chamber is by no means to be kept warm, either by fires or by being closely shut up, as is too generally the case; on the contrary, it should be of a proper temperature, by allowing the admission of cool air into it from time to time. His bed ought to be lightly covered with clothes.

On his recovery a strict attention should be paid to regimen, scrupulously avoiding to overload the stomach, and partaking only of such things as are light, nutritive, and easy of digestion: all other causes likely to induce a relapse, are also to be carefully shunned.

Fresh air, gentle exercise on horseback or in a carriage, agreeable company, and a moderate use of wine, will greatly contribute to the recovery of convalescents. Should the appetite not readily return, or the digestion prove weak, stomachic bitters*, conjoined with the *cinchona* bark, may be advised.—See *Dyspepsia*.

TYPHUS MITIOR, OR NERVOUS FEVER.

TYPHUS is derived from *τυφος*, stupor, a degree of sensorial affection which generally supervenes, sooner or later, in most continued fevers, and which is universally allowed to be a prominent symptom of that to which this name has been especially applied. Typhus mitior may be distinguished from typhus gravior at its commencement, by the attack being more gradual, and the symptoms much milder: in the progress of the disease, by the absence of those symptoms of putrescence enumerated in typhus gravior; and by its being accompanied with less heat and thirst, less frequency of the pulse, and no bilious vomitings.

* 6. R Infus. Gentian. C. f. ℥v.

Tinct. Cort. Cinchonæ, f. ℥ss.

— Calumbæ, f. ℥iij. M.

Capiat Cochl. ij. ter. in die. Adde pro re nata Acid. Sulph. Dilut. ℥. x. ad xv.

* 6. Take Compound Infusion of Gentian, five ounces.

Tincture of Bark, half an ounce.

— Calumba, three drachms.

Mix them, and give two table spoonsful thrice a day, adding occasionally from fifteen to twenty-four drops of the Diluted Sulphuric Acid.



It principally attacks those of weak lax fibres; those who lead a sedentary life, and neglect proper exercise; those who study much; and those who indulge freely in enervating liquors, sensuality, and other debaucheries. It likewise is apt to attack those who are weakened from not using a quantity of nutritive food, proportionable to the exercise and fatigue they daily undergo; hence it is very prevalent among the poor. It is often generated in jails, hospitals, transport and prison ships, ill-constructed and crowded barracks, workhouses, and the ill-ventilated apartments of the indigent. It is also to be met with very frequently in the damp and dirty cellars of the poorer class of manufacturers in large towns.

In warm climates, typhus sometimes occurs, and continued fevers, of most kind, are apt to degenerate into fever of a typhoid type. It is, however, most prevalent in temperate and cold climates. In Great Britain typhus is favoured by a low temperature, being most prevalent in the months of winter, generally abating or disappearing as the heat of summer advances, and often prevailing in a considerable degree in cool wet autumns.

Typhus appears to have two origins, one from a spontaneous generation of the disease in the subject affected by it, and the other, from external infection; but the most general cause of typhus mitior is contagion, communicated through the medium of an impure or vitiated atmosphere, by concentrated effluvia arising from the body of a person labouring under the specific disease; but whatever debilitates the system or depresses the mind, may induce a state of predisposition more readily to be influenced by the operation thereof. Thus, perhaps, we may explain the fact of the ready spreading of an epidemic fever among an army which has for some time suffered great fatigue and exhaustion, as happened with that under the command of Sir John Moore on his retreat to Corunna, or among a people who are ill supplied with nutritive food; whence war, famine, and pestilence, have been observed to succeed each other, or to occur together, from the earliest periods of history. A season of continued heat, combined with moisture, appears also to predispose the human constitution to receive the impression of contagion: for contagious diseases more generally become epidemic in the autumnal period of the year.

In the origin and progress of typhus and such-like fevers, it is undeniable that contagion is the most powerful agent in propagating the disease; but still many of these fevers, though not contagious at their origin, become so in their progress and decline, and in some instances generate others of a much worse description than the original. In all probability the contagious or non-contagious nature of typhus is dependent partly on the quantity or concentration of the effluvium thrown off from the body of the patient, and partly upon the closeness or openness of his apartment; or, in other words, the chance of its propagation from one

individual to another is greatly dependent on the above circumstances.

In a number of persons exposed to the contagion of typhus, some (although rarely) are attacked on the third or fourth day, and others again on the thirteenth; but the most common periods of sickening, after exposure, are from the end of the first week to the middle of the third.

Dr. Haygarth* has employed much attention for many years to ascertain, by numerous facts which had occurred to himself and to other practitioners with whom he had professional intercourse, in what manner the contagion of typhus is propagated, in order to discover how it may be prevented. The conclusions which he has deduced from these facts are of very great importance, for the prevention of misery and preservation of life. They may be briefly comprised, he thinks, in the following natural laws of typhous contagion.

I. Miasms (or contagious vapours), issuing from patients ill of typhus, or from the poison contained in their dirty clothes, utensils, &c., are diffused or dissolved in air, and thus infect persons who are exposed to them.

II. These miasms render the air infectious but to a little distance from the patient, or the poison. They never extend so far as to infect persons in an adjoining street, nor an adjoining house, nor in an adjoining room of the same house, nor even in the patient's own chamber, if large, airy, and kept clean †.

III. Not more than one person in twenty-three is naturally exempted from typhus; for when one hundred and eighty-eight men, women, and children, were exposed fully to the typhous contagion, for days and nights together, in small, close, and dirty rooms, all of them except eight were infected with this fever ‡.

IV. The miasms of variolous, scarlet, typhous, and other contagions, do not render clothes, &c., exposed to them contagious §.

V. Hence, it follows, that the only way by which typhus can be conveyed from the patient's room, so as to infect others out of it, is in the form of contagious dirt, as dirty clothes, utensils, &c., and consequently that the contagion may be completely destroyed by washing them clean.

VI. The typhous poison remains in the body in a *latent* state from about the tenth to the seventy-second day ||, reckoning between the time of exposure to the contagion and the commencement of the fever. This law of nature was discovered by Dr. Haygarth in 1781, from observations on seventy-two cases. It was fully confirmed by Dr. Bancroft ¶ in 1809, from observa-

* See his Letters to Dr. Percival on the Prevention of Infectious Fevers.

† See his Letter to Dr. Percival, p. 76.

‡ See Letter, p. 31.

§ See Letter, p. 54; and his Inquiry, pp. 67, 86; and his Sketch, pp. 217, 369, 384, 386, 404, 542; and the cases related under Scarlet Fever, where 65 young ladies were not infected, though approached by clothes exposed to contagious miasms.

|| See Letter, pp. 64, 69.

¶ See his Essay on Yellow and Typhous Fevers, p. 515.

tions on ninety-nine cases, who as orderlies and nurses attended the army which had arrived at Plymouth from Corunna, infected with typhus: they had not been previously exposed to contagion. He observed that the latent period of typhus varied from the thirteenth to the sixty-eighth day.

From these laws of contagion observed by nature, Dr. Haygarth concludes that typhus may be easily and certainly prevented by *ventilation* (in large, airy, and clean rooms); or by *separation* (into an hospital, or into an adjoining room of the same house where practicable); or, especially by cleanliness*, which entirely destroys the poison, wherever it can be completely accomplished.

On these principles, the fever wards of the Chester Infirmary were established in 1783, the House of Recovery at Manchester in 1796, and since that time fever hospitals at Liverpool, London, Edinburgh, Dublin, and most of the large towns in Great Britain and Ireland. It is highly probable, that typhus always proceeds from a specific poison, like the small-pox, measles, &c. The opinion that typhus is generated by putrefaction, filth, bad diet, or accumulated human exhalations from many persons crowded together in a close room, has been completely refuted by Dr. Bancroft†, as Dr. Haygarth alleges, from numerous well authenticated facts.

On the whole, it is manifest that typhus might be exterminated from any town or district by easy and practicable regulations. This conclusion Dr. Haygarth thinks is not conjectural. It is established on far stronger and more positive evidence than most other kinds of medical knowledge. Ever since 1783, the physicians of Chester have preserved their fellow-citizens from typhus, by requiring the lodgings of the patients (generally strangers) to be completely cleansed on their removal into the fever wards of the Infirmary‡. Other towns have established fever hospitals, but to very little purpose, because they have neglected, what is incomparably of most importance, to cleanse thoroughly from all contagious dirt the houses whence infectious patients had been removed.

It may not be irrelevant to add a few words on the manner in which the matter of contagion may be admitted into the body. It may be conveyed into the stomach by the saliva, or it may be absorbed by the skin; but daily observations may satisfy us, that by far the most ordinary way is inhalation by the lungs. It is in this way applied to the delicate membranous expansion which covers all the minute vessels distributed with such an infinitude of branches around the air-cells of the lungs.

The most general opinion which has been entertained of typhus

* See Dr. Haygarth's Letter to Dr. Percival, pp. 72, 89.

† See his Essay on the Yellow Fever, &c. pp. 37—156.

‡ See Dr. Haygarth's Letter to the Physicians of the Fever Hospital in Dublin, printed by the Society for bettering the Condition of the Poor in Ireland.

fever is, that in all its stages it is a disease of real debility ; but a modern writer* of some eminence tells us, that extensive observation has convinced him, that genuine typhus, so far from being of an asthenic nature, is most certainly an affection of excitement, or of congestion in its first stages, demanding at such times the decidedly evacuant plan. By him typhus has been arranged under three varieties, viz. the simple, the inflammatory, and the congestive. I will not pretend to say, whether or not these divisions are either necessary or judicious ; but it must at the same time be admitted, that from a variety of circumstances, typhus may, however simple in its outset, become connected with local inflammation and determinations of blood to the head, the chest, or abdominal viscera ; hence, occasionally there is considerable intellectual derangement ; or there is uncommon irritability of the stomach, intestines, and liver ; or there is a troublesome cough and pneumonic affection.

Typhus mitior generally comes on with a remarkable mildness in all its symptoms ; and although the patient experiences some trifling indisposition for several days, still he has no reason to suspect the approach of any severe disease. At first no rigors are perceived, there being only a slight chilliness, which is not succeeded by any increase of heat or redness of the face ; on the contrary, it is unusually pale and sunk. He perceives, however, some degree of lassitude, and apparently of debility, with anxiety, dejection of spirits, sighing, and a loathing of food ; and towards evening these affections are somewhat increased.

In the course of a few days, and as the disease advances, there arise a difficulty of breathing, oppression at the chest, pains in the head, accompanied with a confusion of ideas : there is great depression of strength apparently, even occasionally to fainting, whenever the patient attempts to sit up ; the tongue becomes dry, and is covered with a dark brown fur ; the teeth are thickly incrustated with the same ; the pulse is small, low, and frequent, and now and then intermits ; cold clammy sweats break out on the forehead and backs of the hands, while the palms glow with heat ; the urine is pale and watery, like whey ; the whole nervous system is much affected with tremors and twitchings ; involuntary motions of the muscles and tendons arise ; the patient picks at the bed-clothes, and either mutters to himself or talks incoherently. There is seldom, however, any high degree of delirium, nor is this fever ever attended with violent ravings, but there is usually a dilatation in the pupils of the eyes.

In simple typhus, there is commonly some remission of the fever towards the morning, and the patient in general is less oppressed at that period than at any other throughout the twenty-four hours ; but as the excitement gains ground, the debility increases, and

* See Practical Illustrations of Typhus, &c., by J. Armstrong, M.D.

may be observed to be greatest when the exacerbation is at its highest point in the evening.

In the progress of the disease, the system is unequally affected; for sometimes headach, restlessness, and uneasiness prevail in a high degree, while at the same time the tongue is clean and moist: and at other times, while there is no headach or restlessness, the tongue will be dry, foul, and incrusted with dark fur, and profuse sweats will break out. This fever, moreover, is not only thus irregular in affecting various parts of the body differently, but it is also irregular in its exacerbations; and these, instead of taking place in the evening, will arise often in the morning. Again, sometimes the fever is very violent for the first three or four days; it then diminishes for a time, and then perhaps increases again. Evacuations, such as sweating and purging, are very apt to ensue in the course of the disease, which never fail to exhaust the patient.

In typhus fever, a great discharge of saliva sometimes occurs; but as it now and then continues for a considerable time without affording any relief to the patient, it may be concluded to arise from some accidental circumstance, perhaps not unlike to the ptyalism that sometimes takes place in hysteria. In many instances, the spitting is so viscid and ropy, as to inconvenience the patient very much, and by clogging up the fauces, greatly to impede both deglutition and respiration. In such cases, moreover, the tongue and the whole of the mouth are frequently beset with aphthous ulcerations.

Typhus mitior frequently runs on for some weeks, and produces such a state of debility as to destroy the person from that cause alone, or it degenerates into typhus gravior; but when it terminates favourably, it usually goes off about the fourteenth or twentieth day, perhaps, either by diarrhœa, or by a gentle moisture diffused equally over the whole body: but often it exceeds a month in duration, and terminates at last without any evident crisis.

Profuse evacuations by sweating or purging, much watchfulness, sinking of the pulse, great incoherency of ideas, mutterings, picking at the bed-clothes, considerable dilatation of the pupils of the eyes, involuntary discharges by urine and stool, starting of the tendons, and hiccups, point out the near approach of death; whereas, on the contrary, the pulse becoming fuller and more slow, the tongue moist, respiration free, a gentle moisture coming on about the fourteenth day, deafness ensuing, tumours appearing behind the ears, or miliary eruptions, unattended by profuse sweats, being perceived on the body, promise a favourable termination.

From the great disposition to relapse in the severer modifications of this fever, and the patient not being always safe until he is perfectly recovered, it will be advisable to be cautious in the

prognosis or opinion we may give to the relatives of the sick, as to the final result.

The usual appearances on dissection are, a softness and flaccidity in the solids; a dissolved state of the fluids, particularly of the blood; collections of sanious matter in the different cavities; turgescence and inflammation of the thoracic and abdominal viscera; and, in the interior parts of the brain, increased vascularity and collections of a serous fluid. In some cases, however, accompanied by great intellectual derangement from the beginning, the minutest dissection after death has not been able to detect the least vestige of cerebral disease.

From the very gradual manner in which this fever comes on, the great mildness of the symptoms at its commencement, and the time that usually elapses previous to absolute confinement, it is seldom that practitioners have it in their power to cut short its progress by a timely exhibition of proper remedies. Typhus is a disease, which, once formed, it is impossible to stop; it will run its course, and our treatment of it must consist in attending to its progress, and mitigating the violence of its symptoms when necessary.

If there is any nausea or vomiting at the time of applying for advice, it will be right to recommend a gentle emetic of about fourteen or sixteen grains of ipecacuanha, to be immediately taken; or should any costiveness prevail, we may prescribe some laxative medicine to carry off the feculent matter; and to ensure and keep up a regular alvine evacuation in the further course of the disease, it will be proper to repeat this from time to time, or to have recourse to emollient laxative clysters. In many instances, however, the stimulus of the latter, being limited merely to the rectum, may not be adequate to procure so complete an evacuation as may be necessary; and therefore, in these cases, we ought to employ aperient medicines that will dislodge and bring off whatever feculent matter may be contained in the bowels, which by retention might be likely to prove highly offensive, as well as irritating. In administering purgatives, we ought, at the same time, to guard against employing them in such doses as to excite unusual secretion into the intestines, or watery stools. Small doses of hydrargyri submuriæ with jalap*, or a solution of some mild neutral salt, will be the most proper medicines of this class. With these we may evacuate the contents of the bowels with safety and advantage in typhus, from the commencement to the termination of the fever.

* 1 R Hydrargyr. Submur. gr. iij.

Pulv. Jalapæ, gr. x.
Syrup. Rhamni, q. s. M.
Fiant pilulæ iij.

* 1 Take Submuriate of Mercury, three grains.

Powdered Jalap, ten grains.
Syrup of Buckthorn, a sufficiency to form the mass, which divide into three pills.

actioner, that the system would sink under the

the head, giving rise to a high degree of
ally to much intellectual and moral

attack, it will often be found that the system
it will be black, black, black, black, black, black,
state depletion will be a result of the

If I have the opportunity to see the system
as much as I can, I will be able to see the system
in a more complete manner than I have before

claim of an individual, and I will be able to see the system
in a more complete manner than I have before

particular cases, but I will be able to see the system
in a more complete manner than I have before

at cases of this kind, and I will be able to see the system
in a more complete manner than I have before

say the best of it, and I will be able to see the system
in a more complete manner than I have before

and I will be able to see the system
in a more complete manner than I have before

the system, and I will be able to see the system
in a more complete manner than I have before

most of those who are in the system, and I will be able to see the system
in a more complete manner than I have before

with those who are in the system, and I will be able to see the system
in a more complete manner than I have before

to be able to see the system, and I will be able to see the system
in a more complete manner than I have before

means to see the system, and I will be able to see the system
in a more complete manner than I have before

and with those who are in the system, and I will be able to see the system
in a more complete manner than I have before

In many cases of typhus mitior, venesection will neither be necessary nor proper; and it should be borne in mind by every practitioner, that the system sooner sinks under depletion by the lancet in typhus, than in merely symptomatic fevers; which peculiarity in the disease should never be lost sight of by the medical attendant, particularly when arising in persons of a delicate frame. Cases do occur, however, where typhus is somewhat complicated with visceral congestions, or with a considerable determination of blood to the head, giving rise to a high degree of stupor, and occasionally to much intellectual derangement. Under these circumstances, an abstraction of blood appears necessary; but it is only at the onset of the fever that blood-letting will be advisable, for when blood is drawn on the second or third day after the attack, it will often be found to have already suffered a change: it will be black, dissolved, and will not coagulate; under which state, depletion will of course be hurtful.

To relieve the cerebral disease at the commencement, where the symptoms run high, topical bleeding from the temples, by means of several leeches, will be most advisable in persons of a delicate constitution; but in full plethoric habits, it may be more proper to draw off six or eight ounces of blood from the jugular vein or arm on the first day of the attack. With regard to venesection in typhus, I would observe, that it is a remedy applicable only to particular cases, but by no means proper in all. A large portion of cases of this fever would be hurt by venesection, and in many, to say the least, it is uncalled for: but, on the other hand, there are some, and those the most formidable that fall under our observation, which as imperiously require it. The legitimate object of blood-letting in this disease, is the checking those dispositions to the inflammatory action which are often met with in severe cases. A judicious abstraction of blood, in the early stage of fever, not only diminishes the headach, the great sensibility to light and sound, as also the delirium, but apparently shortens the course of the disease.

That genuine acute inflammation does not always, or perhaps even in the majority of cases, attend typhus, may, I think, be admitted: yet in most of the worst cases, and by consequence in most of those which come under posthumous examination, there are unequivocal evidences of genuine inflammation, accompanied with those appearances of venous congestion, which frequently distinguish these diseases from the proper phlegmasiæ.

In cold latitudes, and in the winter season of the year, it is by no means an uncommon occurrence to meet with typhus, complicated with more or less of topical inflammation of the thoracic viscera, constituting pneumonia typhodes. In such cases, I have known venesection to have been employed; but even in these, unless resorted to on the onset of the disease, it has appeared to me to be detrimental; and in two instances which occurred under my observation, seemed indeed to have destroyed the patients.

Instead, therefore, of having recourse to the lancet, where topical inflammation of the viscera of the thorax attends on typhus, and has been of some days' continuance, I would recommend drawing blood from the chest, either by means of a few leeches, or by the application of a scarificator and cupping-glass.—See *Pneumonia Typhodes*.

Affusing the body with cold water, is one of the most powerful and efficacious means which we can make use of in typhus fever; but its effects will be more salutary in proportion as it is adopted early, or during the first stage of the disease. Such being an indisputable fact, established upon the firmest basis, we ought always to employ it during the first, second, or third day of excitement. The affusion may be repeated four or five times in the twenty-four hours, using spring water impregnated with common salt, when sea-water is not to be procured, the feet of the patient being at the same time placed in warm water. The operation being over, they are to be dried, the patient put to bed, and some tepid bland fluid given to him, with the view of promoting a gentle perspiration.

In a more advanced stage of the fever, it will be advisable to substitute tepid affusion; and when we do so, a small portion of ardent spirit may be added to the water, with the view of increasing the evaporative process, on which its efficacy depends in a great measure. Vinegar is usually substituted on such occasions, but the former is preferable.

We are informed by Dr. Currie *, that the safest and most advantageous time for using cold water, either in aspersion or affusion, (but he gives a preference to the latter,) is when the exacerbation is at its height, which is marked by increased flushing, thirst, and restlessness; or immediately after its declination has begun, which induced him to direct its being employed from six to nine o'clock in the evening; but he thinks that it may be used at any time of the day, when there is no sense of chilliness present, when the heat is steadily above what is natural, and when there is no general or profuse perspiration. During the cold stage of the paroxysm of fever, while there is any considerable sense of chilliness present, or where the body is under profuse sensible perspiration, this remedy ought never to be employed, as we might extinguish life by it.

When cold affusion is used in the more advanced stage of typhus, where the heat is reduced, and the debility great, some cordial, such as wine warmed with an addition of spice, or even brandy, should be given immediately after it. In the early stage of the disease, cold affusion appears to cut short the progress of the disease. At more advanced periods, when the strength of the patient, and other circumstances, will admit of its application, it

* See his Medical Reports on the Effects of Water in Fevers, &c.

will seldom fail to moderate the symptoms, and materially contribute to a favourable termination.

Whilst cold water dashed forcibly from a pail, or falling from a height in considerable quantity from a garden watering-pot, is decisively impressive, and ordinarily safe, when employed in an early stage of this and other typhoid fevers; so aspersion or ablution of the body by means of a sponge, will be more eligible and safe in the advanced periods. The effects produced by both modes are grateful and refreshing to the patient, and they usually bring about an abatement of fever, followed by more or less of a diaphoresis, and this again by a refreshing sleep.

As to the *modus operandi* of cold and tepid affusions, whatever may be their immediate influence on the temperature and nervous system, the permanently good effects are to be attributed to the changes which they induce in the circulation*.

We have been gratified with an ingenious publication from the pen of Dr. Jackson, on the subject of cold affusion†; and although he agrees with Dr. Currie as to its utility and propriety in the milder forms of fever (whether infectious, and such as is usually called typhus, or endemic, such as arise from the action of common causes in a diffused form), in the early stages of fever, still he differs from this gentleman on other important points.

Dr. Currie had employed the affusion of cold water in the mild and open forms of fever, without any previous preparation, and likewise in those which are violent, concentrated, and complicated, provided the temperature of the body, on being measured by a thermometer, was higher than the natural standard; but when lower than this, he advises us to abstain from its application. Dr. Jackson, in resorting to it, is guided by what he terms the evidences of a susceptible condition of the system, connected with the simple condition of the disease, being obvious; of the presence of which, he judges by the sensation communicated to his hand in touching the patient's body. Where he finds this deficient in any degree, or where it is unusually distributed on the surface, and unaccompanied by any primary mark of local inflammation, or congestion of any one of the internal organs being discernible, he endeavours to restore the susceptibility of impression, by conducting the patient into an apartment where the air is of a high temperature; by applying warm fomentations to the extremities; by purifying the skin by warm water, soap, and brushes, and then by immersing the whole body in a warm bath, or by affusing warm water generally over its surface. Where there is either a violent or rapid action, or a sluggish circulation, he does not consider these as proper conditions for the cold affusion; but to make them so, he recommends a preparatory process of general bleeding, and other evacuations: whereas, Dr. Currie considered vena-

* See Illustrations of Typhus, &c., by J. Armstrong, M.D.

† See Exposition on the Practice of applying Cold in Fevers, by Dr. Jackson.

section unnecessary to a previous use of cold affusion, except in cases of idiopathic inflammation.

The affusion of cold water on the surface of the body, is considered by Dr. Jackson as a power which makes a strong and general impression on the system, and which arrests the disease, or changes its condition in virtue of that impression; but not by subtracting increased heat, as supposed by Dr. Currie. Indeed, the good effects of the remedy in question cannot, I think, be wholly owing to the mere subtraction of heat; for it has been used with great advantage in many cases of fever, where there has been no perceptible increase of temperature; and where, by affusion, ablution, or aspersion with cold water, the disease has been cut short abruptly, as well as in those where it had risen to a high point. I think we may safely infer that cold affusion, or the suddenly pouring cold water over the whole surface of the body, operates as a powerful stimulant, although its effects, probably, are of short duration, unless frequently repeated; they are produced by the suddenness of the application affecting the nervous energy, and by the shock rousing the dormant susceptibility, so as to induce a new action, as it were, of the nervous system, removing spasmodic contraction of the extreme vessels on the surface, carrying off a large portion of morbid heat by general evaporation, and the remainder by insensible perspiration; thence restoring the healthy action of the exhalants and capillaries.

Although medicines which might excite much sweating would be highly improper in this fever, still we may venture to give those possessed of a mild diaphoretic power*. To assist in taking off the febrile stricture on the skin, a use of cool drink should be allowed, the bed-clothes be light, and cool air be freely admitted. In tempering morbid heat, allaying irritation, obviating petechiæ, and promoting sleep, a plentiful supply of fresh cool air will be a powerful auxiliary to the other means we employ.

In the progress of the disease, it has been usual, when particular affections arise, such as either a difficulty of breathing, violent pains in the head, delirium, or stupor, to excite an inflammation

* 2. R Succî Limon. f. ʒss.
Potassæ Subcarbonat. ʒj.
Aq. Cinnam. f. ʒj.
Confect. Aromat. gr. x.
Syrup. Zingib. f. ʒij.
ft. Haustus, 4tis horis sumendus.

Vel,

3. R Misturæ Camphoræ, f. ʒx.
Liquor. Ammon. Acetat. f. ʒiij.
Spirit. Æther. Nitrici, f. ʒss.

ft. Haustus, quartis horis capiendus.

* 2. Take Lemon Juice, half an ounce.
Subcarbonate of Potass, one scruple.
Cinnamon Water, one ounce.
Aromatic Confection, ten grains.
Syrup of Ginger, two drachms.
Mix them, and let the draught be taken every four hours.

Or,

3. Take Camphorated Mixture, ten drachms.
Solution of Acetate of Ammonia three drachms.
Spirit of Nitric Æther, thirty drops.

Mix them. This draught may be taken every four hours.

in the neighbourhood of the part affected by the application of a blister, and not unfrequently the poor patient has been tortured with half a dozen at a time in the advanced stage of the disorder. This practice is certainly very reprehensible. The application of even a single blister to the back and head, particularly in the advanced stage of this fever, with the view of relieving stupor and coma, is much disapproved of by many physicians; and Dr. Darwin mentions *, that he has seldom seen any beneficial effects derived from it, but, on the contrary, a prejudicial one.

In typhus, where stupor, coma, or delirium prevails, or there is great pain in the head, with restlessness, the pediluvium, together with the application of cold to the head, (having had it properly shaved) by means of large towels dipped in the coldest water, mixed with vinegar or rectified spirits, and renewed frequently until the patient is easier, the heat less, and a disposition to sleep has taken place, will be useful and advisable. In general, it will be necessary to repeat the operation at short intervals at first, and it will be advisable to do it with so much quickness and perseverance, as to produce some degree of shivering. Cold applications to the head and temples will not only prove of infinite advantage, but highly grateful to the feelings of the patient. In mania and phrenitis, the application of cold in this way will also be highly beneficial.

If a purging arises, it is to be stopped by having recourse to astringents †, as advised below; but in the progress of the disease, if a gentle diarrhœa takes place, and seems likely to prove critical, it should by no means be checked.

Profuse sweats are to be obviated by the person being lightly covered with bed-clothes; by keeping his hands and arms uncovered; by admitting fresh air freely into his chamber, and by giving him whatever he drinks, cool, and properly acidulated with lemon or orange juice.

Much rambling and low delirium are apt to arise in typhus from a want of sleep, and to make it necessary to have recourse to opium in order to procure it. The most advisable way of using it in such cases, is to combine it with some gentle diaphoretic ‡.

* See his Zoonomia.

- † 4. R Misturæ Cretæ, f. ʒiv.
Tinct. Catechu, f. ʒij.
— Opii, ℥ xxx.
Aq. Cinnam. f. ʒij.
ft. Mistura, cujus sumat Coch. ij. magna
sextis horis.
‡ 5. R Liqueur. Ammon. Acetat. f. ʒij.
Aque Cinnam. f. ʒj.
Tinct. Opii, ℥ xx.
Syrup. Zingib. ʒij. M.
ft. Haustus.
Vel,
6. R Mistur. Camphoræ, f. ʒj.

- † 4. Take Chalk Mixture, four ounces.
Tincture of Catechu, two drachms.
— Opium, forty-five drops.
Cinnamon Water, two ounces.
Mix them. Two table spoonsful may be
taken every six hours.
‡ 5. Take Solution of the Acetate of Am-
monia, three drachms.
Cinnamon Water, one ounce.
Tincture of Opium, thirty drops.
Syrup of Ginger, two drachms.
Mix them for a draught.
Or,
6. Take Camphorated Mixture, one ounce.

By giving it in this manner early in the evening, we shall in general experience the most beneficial effects from it.

Opiates are indeed more admissible in this species of fever than in any other: but an opiate will be particularly useful in that variety of typhus in which watchfulness and starting are prominent features.

During the stage of excitement, diffusible stimuli would be likely to prove detrimental; and the practice of giving wine in considerable quantities, indiscriminately throughout all the stages of genuine typhus, is therefore improper. So far from their being admissible in this stage of the fever, the lightest and coolest regimen is imperiously demanded: and even every animal substance, with perhaps an exception to milk, had best be prohibited. The patient's diet should consist of farinaceous preparations, occasionally substituting a little beef tea, or chicken broth. Meat of any kind should not be allowed for many days after the crisis or cessation of the fever.

When the fever is somewhat more advanced, and symptoms of debility begin to appear, (for during the first days of typhus the debility is only apparent, not real, as the first stage is one of oppression), a moderate use of wine becomes highly necessary, and may not only be given in the form of negus, somewhat sharpened with the juice of orange, but likewise be mixed with either sago, gruel, panado, or arrow-root, and thus be administered as food. Wonderful, indeed, are the effects produced by wine in typhus fever, when given in the proper stage, as we often see persons recover by a free use of it under unpromising circumstances.

A late physician* of great celebrity, recommends wine and opium in small quantities, repeated every three hours alternately; and this with a view of rousing the system from a state of torpor and debility.

In advising a use of wine, I must caution the practitioner not to run into excess, and over-stimulate the patient, as this might destroy him. Wine, although a very grateful and convenient stimulus, is very liable to be abused by being given in too great a quantity, and at too early a period of the disease. In ordinary cases, a very good effect may be obtained by half a bottle in a day, and this may be regarded as a moderate quantity for an adult; but in some cases a whole bottle may be necessary, and in some a little more; but it should always be given with an equal part of water. The best rule is to proportion the quantity of wine to the degree of debility present, the age of the patient, and the effect produced on him by it.

* Dr. Darwin.

Vini Antim. Tart. ℥ xv.

Syrup. Papav. f. ʒiij. M.

ft. Haustus.

Wine of Tartarized Antimony,
twenty-two drops.

Syrup of Poppies, three drachms.

Mix them for a draught.

Spirits have sometimes been recommended as a substitute for wine, in cases where the latter cannot be afforded or procured; but they do not answer so well. When given, they should be administered much diluted, as in the form of punch. Cider has been considered by some physicians, particularly the late Dr. Gregory of Edinburgh, as the best substitute for wine. Where wine disagrees with the patient, punch or cider may be employed, together with aromatics.

Throughout the whole course of the disease, he should be kept perfectly quiet, and none but those whose business it is to attend on him ought to go near him, except in those cases where the symptoms are very mild, and where there is little or no affection of the head. In such cases the presence of a friend may soothe the mind, and help to dispel gloomy ideas. A plentiful supply of cool and fresh air, throughout the whole course of the disease, is a point of the highest importance, and therefore the patient's chamber should be kept freely ventilated, and his bed be lightly covered with clothes: he should be solaced and comforted with the hope of a speedy recovery, and his thoughts be diverted from that anxiety and dread of danger which invariably attend the complaint.

Many practitioners are in the habit of giving the cinchona bark in this fever, without waiting for even the most imperfect crisis; some having in view its supposed febrifuge qualities, and others, its tonic powers. In mild cases, where there prevails hardly any stupor, or other affection of the head, and where the remissions are regular, it may perhaps be of service; but in a state of convalescence it will prove highly beneficial; and may therefore be given either in substance, decoction, or infusion, as may be found to sit best on the stomach, combined with a few drops of diluted sulphuric or muriatic acid, or with subcarbonate of potass and lemon juice. Where the skin and tongue are dry, where the remissions are irregular, and where the fever abates for a day or two, and then returns with violence, I have always found it prove prejudicial. In all such cases, an infusion of cascarilla, or orange peel, will be a better vehicle to administer the acids in, and I am of opinion that the muriatic is entitled to the preference.

Miliary eruptions sometimes appear as the crisis to this fever; they ought, therefore, by no means to be checked by any kind of evacuation, nor should the patient, on the contrary, be kept too warm in order to force them out.

Where there prevails any unusual coldness in the lower extremities, the application of a couple of small blisters to the inside of the legs, or of stimulating cataplasms to the soles of the feet, will be proper.

In the last stage of typhus, when neither cinchona, wine, or brandy, cold bathing, or even occasional doses of Cayenne pepper, had the effect of rousing the powers of life, or of lessening the thick crust which covered the tongue, it appears, by Dr. Ferriar's

report, that the most singular advantages were obtained by giving the arsenical solution. He found that it did not operate as a general stimulant, but merely as an active tonic, and, therefore, that neither the concomitancy of cough, or dyspnœa, prohibits its use in typhus. As soon as the febrile paroxysms are stopped, he thinks it will be best to suspend the use of the arsenical solution, and to support the patient with bark and different cordials. A very severe case of typhus lately fell under my care, the patient having suffered two relapses of the fever, and her life despaired of, when I was induced to make trial of the mineral solution. Its effects exceeded my expectations, for the woman's life was apparently preserved by it. It was administered in an infusion of cascarilla, with an equal quantity of camphorated mixture.

In bad cases, where startings of the tendons and hiccups arise, besides making use of the means advised, it may be necessary to have recourse to antispasmodics*, such as musk, ammonia, æther, camphor, and opium.

If this fever is likely, or threatens in its progress, to degenerate into typhus gravior, we should administer the mineral acids, but more particularly the muriatic, in such doses as the patient is capable of bearing. To prevent its affecting the stomach and bowels, a few drops of tinctura opii may be added to each dose. An infusion of cascarilla, calumba, or orange peel, may be employed as the vehicle, or we may give the acid in a little wine and water.—See Typhus Gravior.

In an advanced stage of this disease, it sometimes happens that, in addition to a profuse secretion of viscid saliva, little white ulcers, or aphthæ, appear in the inside of the mouth and fauces. In such cases, a gargle composed of borax, honey, and an infusion of roses, should be used three or four times a day.

When the fever goes off, and the patient has somewhat regained

* 7. R Mosch. gr. x.
Aq. Cinnam. f. ʒjss.

Æther. Sulphuric. ʒ xv.

Tinct. Opii, ʒ x. M.
ft. Haustus, ter in die sumendus.

Vel,

8. R Ammonia Subc. gr. v.

Camphor. gr. iv.

Opii, gr. ss.

Confect. Aromat. q. s. M.

ft. Bolus, 6ta quaq. hora sumendus.

Vel,

9. R Misturæ Moschi,
—— Camphoræ, aa f. ʒiij.

Æther. Sulphuric. f. ʒij. M.

ft. Mistura, de qua capiat Cochli. ij. magna
tertia vel quarta quaque hora.

* 7. Take Musk, ten grains.

Cinnamon Water, one ounce
and a half.

Sulphuric Æther, twenty-five
drops.

Tincture of Opium, sixteen drops.

Mix them for a draught, to be taken three
times a day.

Or,

8. Take Subcarbonate of Ammonia, five
grains.

Camphor, four grains.

Opium, half a grain.

Aromatic Confection, a suffi-
ciency to form the whole into a bolus, to
be taken every six hours.

Or,

9. Take Musk Mixture,

Camphor Mixture, each three
ounces.

Sulphuric Æther, two drachms.

Mix them. The dose may be two table
spoonsful every three or four hours.

his strength, he may take daily exercise on horseback, or in a carriage; and in order to remove the irritability and weakness which are left behind, he should enter on a course of the cinchona bark, and other tonics. After a little time, the cold bath will be a proper remedy, if the season of the year is such as to admit of it. If the appetite does not readily return on the cessation of the fever, stomachic bitters* will be proper.—See Dyspepsia.

A degree of mania, or temporary alienation of the mind, sometimes arises at the close of typhus. All that can be done in such a case is to support the patient with a generous nutritive diet; to keep him as quiet and tranquil as possible; and to put him under a course of tonics, carefully avoiding all evacuations.

A specific poison, capable of causing a similar disease in others, is generated in the system of a person under this fever. The poison, as soon as the disease is fairly begun, continues unremittingly to exhale from every pore, until convalescence is nearly completed. Not only the surface of the skin, but also the inner surface of the lungs, mouth, intestines, and bladder, continue to pour out the contagious vapour; consequently the very secretions and excretions are highly impregnated with it. In truth, the patient is surrounded by an atmosphere of his own, very deleterious to all persons susceptible of the disease, who may be exposed to it.

As a matter of precaution, therefore, whenever it happens that a person infected with typhus fever, or indeed, any other contagious disease of a malignant nature, is necessarily confined in a house occupied by a numerous family, he should be removed to the upper story, as the current of heated air is always upwards, and the atmosphere loaded with the contagious steams emanating from the patient's body, will (if he be in a lower apartment) diffuse themselves over the whole house, whereas, if he be placed above, they will have a ready and immediate vent. As strict a non-intercourse as possible with the sick should be enforced; and

* 10. R Infus. Gentian. Comp. f. ℥iv.

Tinct. Card. C.

— Calumb. aa f. ℥ss. M.

Capiat Cochl. ij. ampla mane, hora meridiana, et vespere.

Adde pro re nata

Acid. Sulphur. Dilut. ℥ xiv.

Vel,

11. R Infus. Cort. Cascaril. f. 3x.

Tinct. Gentian. C.

— Cinnam. C. aa f. 5j.

Acid. Sulph. Dilut. ℥ xiiij.

ft. Haustus, ter in die sumendus.

* 10. Take Compound Infusion of Gentian, four ounces.

— Tincture of Cardamoms,

Tincture of Calumba, each half an ounce.

Mix them, and give two table spoonsful morning, noon, and evening, adding occasionally twenty-two drops of the Diluted Sulphuric Acid.

Or,

11. Take Infusion of Cascarilla, ten drachms.

Compound Tincture of Gentian, — Cinnamon,

each one drachm.

Diluted Sulphuric Acid, twenty drops.

Make them into a draught, which is to be taken three times a day.

those whose duty or kindness leads them to visit the patient should be very careful not to inhale his breath, or expose themselves to that stream of perspirable matter which emanates from his body when the bed-clothes are turned down, for the purpose of rendering him any offices of assistance. While engaged in such duties, they should retain their breath for a time; and if under the unavoidable necessity of inhaling the tainted atmosphere, they should, as soon afterwards as possible, blow from the nose, spit, or wash the mouth, with a view of detaching any infectious particles that may have adhered to these passages. All the discharges of the patient should be thrown away at some distance as soon as they are rendered, and the vessel washed with boiling water. But the most important precaution of all is to maintain a perpetual circulation of air in the patient's chamber, throughout the whole course of the disease; and for this purpose, a part of the window should be left open both at top and bottom, and the opposite window, where there is one, or else the door of the room, should also be a little opened. For the better success of ventilation, the bed curtains should never be drawn close round the patient; but merely one of them let down to screen him from the irritation of light. When open windows cannot be had recourse to, on account of high winds, or other inclemency of the weather, a small fire must be kindled in the grate, so as to cause a current and frequent renewal of the air in the chamber, without considerably raising the temperature. Another essential precaution consists in frequently changing the body and bed-linen of the patient, which, as soon as removed and carried away, may be put into a tub and covered over with water, into which a handful of lime or potash may be thrown, for the purpose of detaching the animal matters with which they may be impregnated. In few words, unremitting regard to ventilation, and the strictest attention to cleanliness in all its parts, constitute the whole secret of evading contagion. Fumigations with nitric or muriatic acid, in a state of vapour, as recommended under the succeeding head of Typhus Gravior, may, however, be employed as auxiliaries.

As circumstances may occur for rendering it necessary to remove patients labouring under typhus fever to some distance, it is important to know that this may be effected without subjecting them to any risk. Indeed, considerable benefit has been derived on such occasions by conveying the sick in open carriages, or spring-waggons*, for several miles, freely exposed to the air.

TYPHUS GRAVIOR, OR MALIGNANT AND PUTRID FEVER.

THIS fever takes its name from the malignancy of its nature, and the symptoms of putrefaction which are to be observed towards

* See Outlines of the History and Cure of Fever, by J. Jackson, M.D.—Remarks on the Constitution of the Medical Department of the Army, by the same.

its close. It is to be readily distinguished from the inflammatory by the smallness of the pulse, the sudden and great debility which ensues on its first attack, the brown or black tongue, the dark and fetid sordes about the teeth, the livid flush of the countenance, and the acrid and more intense heat of the skin : and in its more advanced stage, by the petechiæ, or purple spots, which come out on various parts of the body, and the fetid stools which are discharged ; and it may be distinguished from typhus mitior by the great violence of all the symptoms on its first coming on.

The most general cause which gives rise to this disease is contagion, applied either immediately from the body of a person labouring under it, or conveyed in clothes or merchandise, &c. ; but possibly it may be occasioned by the effluvia arising either from animal or vegetable substances in a decayed or putrid state. A want of proper cleanliness, accumulated human exhalations, and contaminated air, may also, I think, prove causes of this fever ; hence it prevails in the houses of the poor, in hospitals, gaols, camps, and on board of ships, especially when such places are much crowded, and the strictest attention is not paid to a free ventilation and due cleanliness.

Those of lax fibres, and who have been weakened by any previous debilitating cause, such as poor diet, long fasting, hard labour, continued want of sleep, too free a use of enervating liquors, and an indulgence in sensuality and other debaucheries, are most liable to attacks of it. We are, therefore, to look on these as so many causes which induce that state of predisposition readily to be influenced by the operation of contagious miasms.

It has been denied by some physicians of the present time, that either the plague, yellow fever, or typhus, are contagious diseases ; and it is true, indeed, that we cannot, in every case, ascertain that the complaint originated from a communication with diseased persons ; nor will the actual communication always produce fever ; many predisposing causes are requisite : and, moreover, the human constitution is evidently less susceptible of diseases at one time than at another. Whoever has paid proper attention to the symptoms of typhus, may, however, be induced readily to conclude, that the surrounding atmosphere, to an extent more or less great, particularly in small, close, unventilated rooms, may become sufficiently impregnated with the effluvia continually exhaling from the diseased body, to infect other persons with a similar disease. In a pure air, in large and well-ventilated apartments, where the dress of the patient and bed-clothes are frequently changed, all excrementitious discharges promptly removed, and an attention paid to cleanliness in general, neither typhus, under any form, plague, or dysentery, are usually contagious, or under such circumstances are rarely communicated from one person to another.

Some writers have supposed infants to be as liable to fevers as adults, and from the same causes ; but I cannot agree with them ;

for I have observed that infants do not readily take fevers, although exposed for a long time to that contagion which has appeared to affect adults round them: and every physician who attends lying-in hospitals, must not only have known many infants suckled without injury, through the whole stage of bad fevers from which their mothers have recovered; but also, in other instances, sucking greedily within an hour or two of their mothers' death.

On the first coming on of typhus gravior, the person is seized with languor; dejection of spirits; amazing depression of muscular strength; and apparently great debility; universal weariness and soreness; pains in the head, back, and extremities, and rigors; the eyes appear full, heavy, yellowish, and often a little inflamed; the temporal arteries throb violently; the tongue is dry and parched; respiration is commonly laborious, and interrupted with deep sighing; the breath is hot and offensive; the urine is crude and pale; the body is costive; and the pulse is usually quick, small, and hard, and now and then fluttering and unequal. Sometimes a great heat, load, and pain, are felt at the pit of the stomach, and a vomiting of bilious matter ensues.

As the disease advances, the pulse increases in frequency (beating often from 100 to 130 in a minute); there is apparently vast debility; great heat and dryness of the skin; oppression at the breast, with anxiety, sighing, and moaning; the thirst is greatly increased; the tongue, mouth, lips, and teeth, are covered over with a brown or black tenacious fur; the speech is inarticulate, and scarcely intelligible; the patient mutters much, and delirium arises. The fever continuing to increase still more in violence, symptoms of putrefaction shew themselves; the breath becomes highly offensive; the urine deposits a black and fetid sediment; the stools are dark, disagreeable, and pass off insensibly; hæmorrhages issue from the gums, nostrils, mouth, and other parts of the body; livid spots, or petechiæ, appear on its surface; the pulse intermits and sinks; the extremities grow cold; hiccups ensue; and death at last closes the tragic scene.

When this fever does not terminate fatally, it generally begins, in cold climates, to diminish about the commencement of the third week, and goes off gradually towards the end of the fourth, without any very evident crisis; but in warm climates it seldom continues above a week or ten days, if so long. Our opinion, as to the event, is to be formed by the degree of violence in the symptoms, particularly after the appearance of petechiæ, although, in some instances, recoveries have been effected under the most unpromising appearances. An abatement of febrile heat and thirst, the tongue becoming moist and clean, a gentle moisture diffused equally over the whole surface of the body, loose stools, turbid urine, the pulse being stronger, but less frequent, a free secretion of saliva, tumour and suppuration of the parotid, axillary,

or inguinal glands, a scabby eruption about the mouth, and the delirium and stupor abating, or going off, may be regarded in a favourable light. On the contrary, great muscular debility, very laborious respiration, difficulty of deglutition, stupidity, and listlessness of the eyes, perpetual writhing of the body, petechiæ of a livid colour, with dark, offensive, and involuntary discharges by urine and stool, fetid and cadaverous sweats, hæmorrhages, sub-sultus tendinum, and hiccups, denote the almost certain dissolution of the patient.

In some countries where the yellow fever occasionally makes its appearance, we have just grounds for presuming that typhus gravior, attended with bilious symptoms, has been mistaken for the former at times; and, indeed, from some papers lately transmitted to me from Dr. Townsend of New York, and for which I beg leave to offer him my best thanks, it appears that this was the case with some practitioners who are members of the Incorporated Medical Society of that place, respecting a fever of the malignant typhoid kind, denominated by Dr. Richard Pennel in his Inaugural Thesis, the Bilious Typhus; which prevailed in the summer and autumn of 1820, in some of the very confined districts of the city, and where there was a dense population, with a total neglect of due cleanliness and proper ventilation; but on due consideration, the two diseases in question are essentially and radically different. In the yellow fever, there is invariably a vomiting of a flaky, dark, or coffee-ground like matter, whereas in typhus gravior we meet with no such accompanying symptom. Moreover, the treatment in the two diseases must be very different; for an emetic in the early stage of typhus gravior, is generally administered, and with great benefit to the patient; but in the yellow fever, this remedy would be likely to hurry the unhappy sufferer out of existence, there being naturally great irritation at the stomach, and very severe retchings.

The appearances usually perceived on dissection in typhus gravior are, inflammations of the brain and viscera, but more particularly of the stomach and intestines, which are now and then found in a gangrenous state. In the muscular fibres there seems likewise a strong tendency to gangrene.

On the very first taking place of any of the symptoms of this fever, we should immediately attend to them, and endeavour to prevent any bad consequences from ensuing, as they will never go off of themselves, but will continue to increase, until a disease of a most dangerous nature takes place. This being the case, we should resort to proper remedies at the first onset. The most proper remedy will be an emetic of about fifteen grains of ipecacuanha, with one grain of tartarized antimony, which may be worked off with an infusion of the flores anthemidis. An emetic at the commencement of the disease, is a very important article, and the clearing of the stomach is not the only good effect to be expected from this remedy. After its operation is over, the

bowels may be opened with some gentle purgative*. Possibly a few grains of hydrargyri submuriæ combined with jalap, or the extract of colocynth, may be preferable to any other. Should the desired effect not be produced by these medicines, an aperient clyster may be administered†. Throughout the course of the disease, the patient, in no case, should be more than two days without a stool, for a great deal of fæces are produced in fever although little food is taken, and costiveness is apt to induce an increase of heat, and affections of the head, as delirium, &c.

These steps being pursued, and the nature of the disease clearly ascertained, I would advise the ablution of the patient with cold water, or rather a general affusion, provided the heat of the body is steadily above the temperature of health. The good effects of this mode of practice I have often experienced.

The late Dr. Currie, of Liverpool, reports, that this fever having made its appearance in a regiment quartered in that town, he had the men drawn up and examined, seventeen of whom were found with symptoms of it upon them: these he subjected to the cold affusion once, or sometimes twice a-day. In fifteen of this number the contagion was extinguished, and in the remaining two, the fever went through its course. The healthy part of the regiment bathed in the sea daily, and by these means he effectually destroyed the contagion. He further relates, that of thirty-two who went through the disease, by its being too confirmed to be removed at the time of his first seeing them, only two died; and with these the cold affusion was not had recourse to.

This gentleman's report, with the authorities of other practitioners of eminence, clearly prove the application of cold water by affusion on the first attack of the complaint to be, under certain restrictions, an efficacious remedy for stopping its progress, as likewise that of other low contagious fevers.

Dr. Currie found that the most advantageous time for using the cold affusion is when the exacerbation is at its height, or immediately after it is begun, which is generally from six to nine in the evening; but he observes it may be used with safety at any time

* 1. R Mann. Optim. ʒij.
Potassæ Tartrat. ʒiij.
Infus. Sennæ, Comp. f. ʒiss. M.

Ft. Solutio pro dos.

Vel,

2. R Hydrargyr. Submur. gr. v.

Extract. Colocynth. C. gr. x.

Fiant pilulæ iij. pro dos.

† 3. R Decoct. Malvæ Compos. f. ʒxij.

Sodæ Sulphat. ʒss.

Ol. Olivæ, ft. ʒj. M. f. Enema.

* 1. Take Manna, two drachms.

Tartrate of Potass, three drachms.

Compound Infusion of Senna, one ounce and a half.

Mix them for a dose.

Or,

2. Take Submuriate of Mercury, five grains.

Compound Extract of Colocynth, ten grains.

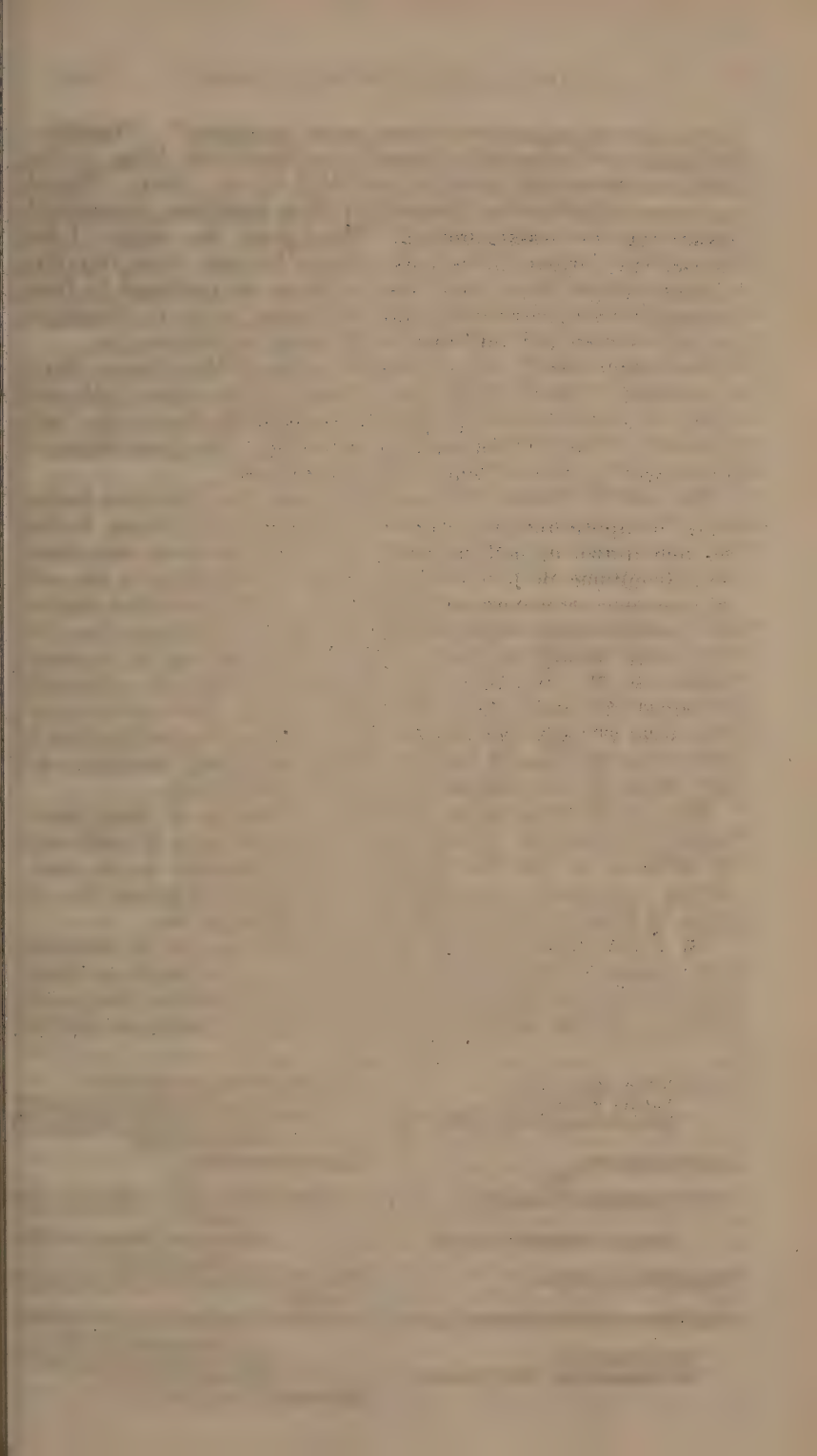
Make the mass into three pills, to be taken at once.

† 3. Take Compound Decoction of Marshmallows, twelve ounces.

Sulphate of Soda, half an ounce.

Olive Oil, one ounce.

Mix them for a clyster.



of the day, when there is no great sense of chilliness present; when the heat of the surface is steadily above what is natural; and when there is no general or profuse perspiration.

The same remedy has likewise been successfully employed by him, myself, and many others, in the more advanced stage of the fever, so as seldom to fail of procuring a safe termination. He relates the case of a soldier who was in the ninth day of the disease when he first saw him: his pulse was 100, and feeble; his heat was 104; his thirst very great; his tongue foul and black; his mind much confused, and at times he was delirious; and petechiæ were dispersed over his whole body. The mode of treatment was as follows: his strength was directed to be supported by administering a bottle of wine a day, with an equal quantity of gruel; every night he took an opiate draught, and his body was kept open by laxative clysters, and, when these failed, by a few grains of calomel. A bucket-full of salt water was directed to be thrown over him immediately, which was to be repeated according to circumstances.

The effect was, that in a few minutes after the affusion, the heat lessened to 98; the pulse moderated to 96; and his mind became more calm and collected. Two hours afterwards he had relapsed nearly into his former state, but the night was passed with greater tranquillity. The whole of this practice was continued with nearly the same result until the twelfth day of the disease, the affusion having been performed in the evening, and occasionally at noon. The fever continued its usual period; but on the twelfth day, the heat having sunk to its natural standard, the cold affusion was thenceforth omitted, and instead of it, the body was sponged all over once or twice a day with vinegar.

In those cases where the fever had been of eleven, twelve, or thirteen days' standing, and the heat of the body was inconsiderable, he thought it prudent to make the degree of cold very moderate, and in some instances he substituted tepid ablution, or sponged the body over with vinegar by itself or diluted with water.

Some communications to Dr. Currie from Mr. Marshall, surgeon of the Cheshire regiment, bear further testimony to the good effects of this remedy in typhus fever. In sixty cases out of sixty-four, in which it was employed at an early period, the disease was arrested by having recourse to it three or four times; and in the other four which were advanced in their progress, although the disease was not stopped from going through its natural course, still all the patients recovered. Mr. Marshall mentions, that from the time he began the cold affusion, he used little or no wine, no opium, nor indeed scarcely any other remedy in any one case in which the cold affusion was employed; which report is of itself sufficient to establish its decided superiority over every other mode of treatment.

It is, however, in the early stages of low contagious fevers that we can employ it with most advantage. It has, indeed been used

by many practitioners, in some instances, so late as the twelfth, or even the fourteenth day, with safety and success; but it can only be employed at this advanced period, in the instances in which the heat keeps up steadily above the natural standard, and the respiration continues free. In such cases it has been observed to appease agitation and restlessness, dissipate delirium, and, as it were, snatch the patient from impending dissolution. When the remedy is to be had recourse to, every arrangement should be made for the affusion before the patient is moved at all; and fatigue as well as disquiet should be avoided as much as possible. In those cases where the delicacy of the system, or the apprehensions of the patient, or of the by-stander, may prevent cold affusion from being employed, we may substitute tepid affusion for the more powerful remedy, or we may recommend either ablu-tion or aspersion.

A memorable instance of the good effects of cold affusion came under my immediate knowledge some years ago, whilst I practised in the West Indies. A professional gentleman of my acquaintance, residing in the island of Nevis, was attacked with this fever, and it proceeded with such violence, that in a few days petechiæ appeared on different parts of his body, and a hæmorrhage of blood issued from his nostrils, mouth, and other places. Under these unfavourable circumstances he was freely exposed to the open air, and one or two buckets of cold water were thrown over him; he was then wiped perfectly dry, and replaced in his bed; which plan of proceeding was repeated twice and sometimes thrice a day. By means of this application, the administration of an opiate at night, and a liberal allowance of wine, his life was preserved, to the great but pleasing astonishment of all his friends.

I have been much in the habit of recommending cold affusion, or ablu-tion, in most cases of typhus fever, and with very beneficial effects. The same practice has been adopted in the London House of Recovery, and apparently with the most decided success. Obvious, however, as are the advantages to be derived from the remedy in question, still there are many practitioners who look on it as an innovation, and are therefore averse to it.

In the early stage of typhus, the superior efficacy of affusion over ablu-tion is unquestionable; its operation extends beyond the mere abstraction of heat from the surface: it acts powerfully on the nervous system. Besides its effectually removing the uneasy sensation of heat in the beginning of febrile diseases, and thus indirectly recruiting the animal powers, it induces sleep. We well know that when any disagreeable sensation is removed, sleep soon follows; and it happens so in this instance. After the fourth or fifth day of fever, the influence of both affusion and ablu-tion is greatly diminished, and not sufficient to interrupt the morbid actions; at a still more advanced stage the heat is removed nearly in the same degree, by washing the surface of the body with a wetted sponge, or cloths dipped in water, as by pouring cold

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water on the naked body; and the patient is relieved nearly the same by one mode of treatment as by the other. Thus much for the comparative merits of affusion and ablution.

In the advanced stages of typhus gravior, as well as of typhus mitior, where either the affusion of water of a low temperature, the immersion of the patient, or even the sprinkling his body with cold water, might in the least endanger our arresting the movements of life, we should always take the precaution of giving a glass of warm wine, or some other powerful cordial, immediately after employing the remedy.

It is no uncommon occurrence for the symptoms to run very high at the commencement of this fever, so as to give it rather an inflammatory appearance; which has induced practitioners, at times, to draw off blood, by opening a vein: but, except in those cases where there is great intellectual derangement, considerable determination of blood to the head, or symptoms of venous congestion therein, venesection will not be requisite. In all such cases, no doubt, the drawing off blood (proportioning the quantity to existing circumstances,) at an early stage of the disease, will be proper and serviceable; and should the cerebral congestion not be relieved, or the fever be of some days' duration, we may then apply six or eight leeches to the temples.

The prostration of strength, which ensues in the early stage of typhus, has by some physicians been considered as chiefly occasioned by an undue quantity of blood being determined to the vessels of the brain; and under this idea, when called to a person labouring under typhus fever, however great the depression of strength may appear, if the pain in the head be violent, they either order the temporal artery to be opened, where it can be done conveniently, or direct eight or ten leeches to be applied to the forehead and temples, and be afterwards allowed to bleed freely.

Whatever is given to the patient for drink ought to be cold, and gently acidulated with the juice of oranges or lemons. The mineral acids likewise are, beyond all doubt, better remedies in this and other malignant diseases, than we have been accustomed to regard them; and from having employed them, but more particularly the muriatic, for several years with very great success in typhus gravior, I can vouch for their efficacy. My usual plan of proceeding is as follows:—Having relieved the stomach by a gentle emetic where nausea prevails, cleared the bowels of their feculent contents by a proper dose of hydrargyri submurias, joined with a few grains of the extract colocynth. c., and subjected the patient to cold affusion, when the circumstances already noticed have admitted of it, I prescribe for adults ten or twelve drops of the muriatic acid, guarded with five drops of tinctura opii; and as a vehicle I employ about an ounce and a half of an infusion of cascarilla, calumba, or orange peel. This draught I direct to be repeated every four hours, gradually increasing the quantity of the acid in each to eighteen or twenty drops, or more. When the

fever begins to decline, or to shew remissions, I substitute a decoction of cinchona instead of the infusion of calumba, cascarilla, or orange peel.

The effects of the muriatic acid in all febrile diseases of a malignant nature are truly great; and from using it in all such cases, my practice has been attended with the most decided success. As a confirmation of its utility, it is proper to mention, that a considerable pension has been granted by the King of Prussia to Dr. Reich, professor of medicine at the university of Erling, in Franconia, for making known a remedy, by the use of which all danger was removed in acute diseases of a malignant nature; and that, on a disclosure of the secret, it proved to be the acids containing oxygen, but particularly the muriatic. In cases of extreme danger, we are told by him,* that one or two drachms of the acid may be given at once. The discovery, however, cannot be claimed by the Prussian professor, as it is well known that the late Sir William Fordyce highly recommended the muriatic acid to be given internally in diseases of a putrid or malignant nature, and likewise to be applied in the form of gargle to the sloughs of the throat which often accompany such fevers.

In typhus gravior, as well as in scarlatina, the internal use of the oxygenated muriatic acid is a powerful and highly efficacious medicine.

A material circumstance to be attended to, not only at the commencement of this fever, but through its whole course, is to cover the patient lightly with bedclothes, and to keep his apartment cool and properly ventilated, by allowing a regular and free admission of fresh air into it; and in order to render it pleasant both to himself and his attendants, it ought to be sprinkled several times a day with warm vinegar and camphorated spirit. Fumigations in the manner herein after noticed will also be advisable. Cleanliness, in the strictest sense of the word, is to be most carefully attended to; and, therefore, not only the bed and body linen should be changed frequently, but whenever a motion takes place, it ought immediately to be removed.

The viscid phlegm, which collects about the tongue and teeth, should be coagulated by some austere acid, and then it may be scraped off by a knife, or be wiped away with a bit of flannel dipped in vinegar, or salt and water.

Although there is not usually any regular crisis to this fever, still nature sometimes endeavours to throw it off by a gentle moisture diffused equally over the whole surface of the body; to promote this, we may advise some gentle diaphoretic*; but we

* See a translation of his German work, by the late Dr. Parry, of Bath.

* 4. R Camphoræ, gr. iv.
Pulv. Ipecac. gr. iij.

Confect. Aromat. gr. x. M.
ft. Bolus, 6tis horis sumendus.

* 4. Take Camphor, four grains.
Powder of Ipecacuanha, three grains.
Aromatic Confection, ten grains.
Make them into a bolus, which may be taken every six hours.

are carefully to guard against exciting profuse sweats, which would certainly prove prejudicial.

In the first stage of the disease, where there are local determinations, and there arises any violent affection of the head, or difficulty of breathing, it has been usual to apply a blister to the neighbourhood of the part affected. Where stupor prevails, with little or no delirium, we need not employ it: but where the delirium, in the first stage of the disease, is violent, and accompanied with great wildness of the eyes, so as to threaten a phrenitis, we may recommend it, and probably it will afford relief. In an advanced stage, or after symptoms of putrescency have become obvious, the application of a blister would be highly improper, as mortification is apt to attack the blistered parts. Rubefacients are preferable, and may be applied to a great extent of surface at short intervals.

In typhus gravior, as well as the milder form of the disease, the application of cold to the head might probably be substituted for a blister with advantage in those cases where there prevails either coma, or delirium, or there is a great pain in the head, with much restlessness. Having had the head properly shaved, a large towel, dipped in the coldest water, may be applied all over it, renewing the process frequently until the patient is easier, the heat less, and a disposition to tranquil sleep has taken place. At first it will be necessary to repeat the operation at short intervals, and it will be desirable to do it with such quickness and perseverance, as to produce some degree of shivering. In severe cases, we may substitute the application of powdered ice, enclosed in a bladder, to the shaven scalp.

When hæmorrhages ensue, and petechiæ have appeared on the body, we should have recourse to the most powerful antiseptics, such as vegetable and mineral acids, carbonic acid in every form, liquors in a state of fermentation, oxygen gas, oxygenated muriate of potass*, aerated waters, wine, cold affusion, and cinchona†.

* 5. R Muriat. Potassæ Oxygenat. ʒi—3ss.

Tinct. Cort. Aurant. f. 3i.

Aq. Cinnam. f. ʒjss.

Syrup. Simpl. f. 3j. M.

ft. Haustus, 3tia hora capiendus.

† 6. R Decoct. Chinchonæ, f. ʒvij.

Tinct. Serpent. f.

—— Cinnam. f. āā ʒss. M.

ft. Mistura, ejus sumat uncias duas tertiis horis cum Acid. Nitrici Dilut. ℥vi.—xvi.

* 5. Take Oxygenated Muriate of Potass, from one scruple to half a drachm.

Tincture of Orange Peel, one drachm.

Cinnamon Water, one ounce and a half.

Common Syrup, one drachm.

Mix them. This draught may be taken every three hours.

† 6. Take Decoction of Bark, seven ounces.

Tincture of Snake Root,

—— Cinnamon, each half an ounce.

Shake them together, and of the mixture let the patient take about four table-spoonsful every three hours, with from ten to twenty-four drops of Diluted Nitric Acid.

We may also administer clysters of diluted vinegar *, or crystalized acid of lemons, in moderate quantities, that they may remain in the rectum, and thereby be likely to be absorbed.

The exhibition of fixed air in the form of yeast has been recommended in this fever. With respect to the use of this remedy internally in typhus, some practitioners have looked upon it rather as a doubtful remedy, although they readily subscribe to its good effects as an external application in fetid putrid ulcers. I have made trial of it very frequently, and, as I conceive, with some advantage; nor did it, in a single instance, excite any commotion or disorder, either in the stomach or bowels of my patients, as some have reported to have happened with them on making use of it. As the good effects of yeast seem to depend on the fixed air which it contains, it is probable that we might substitute water impregnated with the gas, to great advantage, as we should thereby avoid the disagreeable consequences attributed to it. The mode in which I administered yeast was by adding one or two table-spoonsful of it to a quart of an infusion of malt or mild porter, of which the patient took a wine-glassful very frequently.

Whatever may be the mode of action of yeast in typhus, the fact appears to be indisputable, that fixed air takes off that extreme debility of the stomach so conspicuously marked in disorders of this nature; and in proportion as that subsides, the pulse rises, becomes slower and fuller, the burning heat on the skin disappears, and a truce is gained for the reception of nutritive supplies.

In the first stage of typhus, when there is a high degree of excitement, wine would be improper; but after some days' continuance, and when there is no cerebral or other visceral conges-

Vel,

7. R Pulv. Cinchon. ʒss.—3j.

Tinct. ejusdem, f. 3ij.

Aq. Cinnam. f. ʒjss.

Acid. Muriat. ℥viiij.—xij. M.

Pro haustu, secunda vel tertia quaque hora sumendo.

Vel,

8. R Decoct. Cinchona f. ʒjss.

Tinct. ejusdem. f. 3ij.

Acid. Muriat. Oxygenat. ℥x. M.

ft. Haustus, 3tiis horis capiendus.

* 9. R Decoct. Malvæ Compos. f. ʒvj.

Aceti Communis, f. ʒijss. M.

ft. Enema.

Or,

7. Take Powder of Peruvian Bark, from half a drachm to one drachm.

Tincture of the same, two drachms.

Cinnamon Water, one ounce and a half.

Muriatic Acid, from twelve to eighteen drops.

Mix them for a draught, to be taken every second or third hour.

Or,

8. Take Decoction of Peruvian bark, one ounce and a half.

Tincture of the same, two drachms.

Oxygenated Muriatic Acid, fifteen drops.

Mix them, and give this draught every three hours.

* 9. Take Compound Decoction of Marshmallows, six ounces.

Common Vinegar, two ounces and a half.

Mix them for a clyster.

tion, a moderate use of it will be advisable. At the commencement of typhus, where only one or two organs are involved in the typhoid state (as, for instance, when the tongue is furred, or the evacuations from the bowels are very dark, while at the same time the body continues of a healthy colour, and the other secretions are of a natural appearance), it would be highly injurious to prescribe wine in considerable doses; but in the more advanced stages, when the whole body is verging towards the putrid state; when the skin is of a dark colour, and covered with petechiæ; when the mouth and fauces are parched, and the tongue and gums encrusted with a dark fur, we may resort to this remedy with greater freedom. It may then be mixed in panado, gruel, or whatever else of the like kind the patient takes for food, or it may be given to him properly diluted with water to drink.

For the healing of ulcers in the mouth, we may employ a solution of alum in water (an ounce of the former to a pint of the latter), as a gargle, which will quickly take away the stench that arises from them; or we may substitute that which has been recommended in typhus mitior.

In the advanced stage of typhus gravior, it is of the utmost consequence to procure rest; and therefore, where there is no great delirium, we may give an opiate towards bed-time. Combining it with some diaphoretic* will prevent any deleterious effects from it, and therefore it will be best to give it in this way.

A slight purging, attended with a gentle moisture on the skin, not unfrequently arises towards the close of this fever, and now and then assists in carrying it off; but where it does not seem to produce a critical effect, it ought to be stopped as quickly as possible by astringents†.

When we succeed in removing the symptoms entirely by the means which have been pointed out, or in procuring a cessation of the fever, we are to endeavour to prevent its return by a free use of cinchona bark, the cortex cuspariæ, infusions of gentian and orange-peel, and other stomachic tonics; and in order to recruit the strength, the patient should be directed to use a nourishing

* 10. R Liqueur. Ammon. Acet. f. ʒiij.

Aquæ Cinnam. f. ʒj.

Tinct. Opii, ℥xxv.

Syrup. Simpl. f. ʒij. M.

ft. Haustus.

† 11. R Confect. Aromat. ʒss.

Aq. Cinnam. f.

— Pimentæ, āā f. ʒjss.

— Fontan. f. ʒij.

Tinct. Kino, f. ʒij.

— Opii, ℥xxx. M.

ft. Mistura, cujus sumat Cochli. ij. magnatim horis.

* 10. Take Solution of Acetate of Ammonia, three drachms.

Cinnamon Water, one ounce.

Tincture of Opium, forty drops.

Syrup, two drachms.

Mix them for a draught.

† 11. Take Aromatic Confection, half a drachm:

Cinnamon and Pimento Water, of each one ounce and a half.

Pure Water, two ounces.

Tincture of Kino, two drachms.

— Opium, forty-five drops.

Of this mixture, take two large spoonfuls every four hours.

diet, with wine in moderation; and he should take such gentle exercise as his state of convalescence will admit.

Having pointed out the mode of treatment to be adopted when the disease actually takes place, it seems proper likewise to mention the precautions it may be necessary to pursue, in order to prevent its contagion from being communicated to others.

When the disease arises, the sick ought to be removed to a clean and well-aired room in the most remote part of the house, and as much separated from the rest of the family as possible; his bed-linen should be changed frequently; his body be kept clean; whatever comes from him, either by stool or urine, be immediately removed and emptied; and his chamber be well ventilated by allowing a free admission of fresh air into it; it may likewise be sprinkled frequently with warm vinegar, in which some of the aromatic herbs have been infused. No fire should be kept in the room. In summer the patient should be covered only with a sheet, and in winter with a single blanket above the sheet. The good effects which arise from removing patients in this fever from contaminated air, are particularly remarkable among the poor; for a great many of them will recover when brought to an hospital or ward of recovery, although they take little or nothing medicinal: whilst those who remain at their own houses, and have the best medicines and attendance, will sink rapidly. None but the necessary attendants should have any communication with the sick; and these, to guard against contagion, should avoid sitting down on the patient's bed; and they must likewise carefully avoid inhaling the vapour arising immediately from his body. When near him, they may keep a sponge or handkerchief, moistened in camphorated spirit or vinegar, to the nose and mouth.

In every species of typhus, direct and immediate exhalations from the sick, provided there is a sufficient approximation or actual contact of another, are indisputably equal, in some cases, to the infecting such person, even when the most minute attention shall have been paid to cleanliness and ventilation.

In hospitals, camps, and on board of ships, where a number are unavoidably crowded together, so as to render it impossible to cut off the communication between the healthy and the diseased, the simple means before recited will not prove sufficiently powerful for destroying the contagion, and therefore others must be adopted. In all such instances, besides well fumigating the apartments, clothes, beds, bedding, and hammocks of the sick, as hereafter advised, changing them frequently for fresh ones, paying the strictest attention to cleanliness in every respect, well ventilating every place where they are lodged by a constant and free admission of fresh air,—we should oblige those in health, as well as those tainted by the contagion, to undergo daily ablution with cold water.

Nitric acid has been used by the late Dr. Carmichael Smyth, as a

rejoice as his state of convalescence will admit.

Whether comes from food, either by stool or urine, be immediate

romatic herbs have been taken. No one should be kept in the
room. In summer the patient should be covered only with

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sary attendants should have any communication with the sick; and

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and has been used by the Dr. Carmichael Smith, as a

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From the well-known efficacy of the sulphuric acid in destroying contagion, he advises it to be employed as a disinfectant.

Dr. James Guyton observes in his treatise on the Miasmata the power of the mineral acids to destroy contagion, and endeavors to establish the superiority of the muriatic acid over others. Upon a full investigation of the matter, it appears that the power of the mineral acids to destroy contagion is known to Sir John Franklin as early as the year 1814; and the utility for that purpose was ascertained by Dr. Johnson in a pamphlet published in 1815, in which we are told that the vapour of sulphuric acid was successfully employed by him in connection with the muriatic acid.

fumigation, with great success in this fever. In the year 1780, the disease broke out among the Spanish prisoners confined in Winchester Castle; he embraced the opportunity of giving the remedy a fair trial, and obtaining the most decisive evidence of its happy power in preventing the spreading or farther communication of the infection. He found he could use it without risk or inconvenience to respiration, and therefore thought it the most proper antidote to be applied, where persons are unavoidably obliged to be present.

The Doctor's mode of obtaining nitric acid gas, is by decomposing nitre by means of heated sulphuric acid, which may be done as follows: Put half an ounce of this acid into a crucible, glass, china cup or saucer, and warm this over a lamp, or in heated sand, adding to it, from time to time, some nitre: these vessels he directs to be placed at 20 or 30 feet distance from each other, according to the height of the ceiling and the virulence of the contagion. In hospitals and prisons, he advises the lamps or vessels containing heated sand to be placed on the floor; but on board of ships, he recommends to hang them to the beams by waxed silk cords.

From the well-known efficacy of the sulphuric acid in destroying contagion, he advises it to be employed as a fumigation for clothes and furniture, &c.; but for purifying empty prisons, hospital wards, and ships, he gives the preference to the nitric, its vapour being more volatile and penetrating, and not leaving the disagreeable smell which the sulphuric does, and thinking it at the same time equally efficacious.

Monsieur Guyton Morveau, in his Treatise on the Means of purifying infected Air, claims the merit of being the discoverer of the power of the mineral acids to destroy contagion, and endeavours to establish the superiority of the muriatic acid over all others. Upon a full investigation of the matter, it appears, however, that the power of the mineral acids to destroy contagion was known to Sir John Pringle as early as the year 1750; and their utility for that purpose was mentioned by Dr. Johnson in his pamphlet published in 1758, in which we are told that the vapour of muriatic acid was successfully employed by him in correcting the contagion of a very malignant fever, which had raged at Kidderminster two years before that period.

Dr. Smyth has also claimed the having been the first who used the mineral acid gases in the apartments of the sick, and has alleged that they never had been employed by Dr. Johnson but in places where no one was present, or whence the sick were removed. This opinion has been refuted by Dr. Johnson's son, and the invention of his father most incontestably established*. What Dr. Smyth seems therefore entitled to is, the merit of having

* See Dr. John Johnson's Reply to Dr. Smyth.

brought the discovery into public notice, and of having applied and extended it to general use.

It seems of little consequence whether we employ the nitric acid or the muriatic, in the form of gas, for the purpose of destroying contagion and purifying infected air, as the powers of both are extensive and certain. The muriatic is, however, thought to be more diffusible than the other. When we give it the preference, it may be used in the following manner:—Put one pound of common salt into an earthen vessel, and pour over it, from time to time, a small quantity of sulphuric acid, till the whole salt is moistened. If the air is foul and peculiarly offensive, apply a gentle heat under the vessel, to extricate a larger quantity of vapour; but, in general, the simple addition of the acid to the salt will be found sufficient, unless the apartment is very large.

The most effectual, however, of all fumigations, is perhaps the following, but it requires some nicety.—Take of manganese in powder two parts, the same of common salt, of sulphuric acid three parts, and of water one part. Put an ounce of the mixed manganese and salt into a basin, add of water a large tea-spoonful, then drop in half a tea-spoonful of sulphuric acid, and repeat this till you have used a tea-spoonful and a half of the acid. In this manner keep up a sensible extrication of the fumes.

On the appearance of typhus or any infectious disorder in a gaol, or hospital, workhouse, garrison, transport-ship, or any other place where many persons are crowded together, we should not fail to advise one of these gaseous fumigations in every room, in addition to a free ventilation and the greatest cleanliness. The same steps should be adopted in academies, boarding-schools, and even our dwelling-houses.

OF THE YELLOW FEVER, OR TYPHUS ICTERODES.

THIS disease takes its name (improperly, however,) from one particular symptom; but which, although pretty general, is by no means universal, nor even essential to its existence. By Sauvages, it has been denominated typhus icterodes: by Cullen, typhus cum flavidine cutis; by the French, la maladie de Siam, and fièvre des matelots: and by the Spaniards, vomito prieto.

Of late years this fever has prevailed throughout the several colonies in the West Indies, and over a great portion of the American continent; from which places it extended in a short period to the southern parts of Europe, and has nearly equalled the plague in its devastation.

With respect to the origin of the yellow fever in America, there has prevailed a great difference of opinion; some supposing it to have been introduced from the West Indies: and others, that it took its rise from the exposure of putrid animal and

and that the streets adjoining to these

vegetable substances on the public wharfs of the city of Philadelphia; which opinion is strongly supported by Dr. Rush, as he found that the streets adjoining to these wharfs were the first in which the disease made its appearance, and that in several instances it could be clearly traced from thence to other parts of the city. Let this be as it may, it is evident, from the report of Dr. Chisholme, and others who have written on the disease, that the fever which prevailed in Philadelphia was exactly the same with that which raged in the West India colonies.

Dr. Clarke informs us, that there appears to have been such an extensive and very peculiar deranged state of the atmosphere in the towns of the West Indies and in North America, that it is more probable the disease was produced by this general cause, breaking out nearly at the same time in these different places, than that it was carried from the one to the other, either by persons or in any kinds of goods or merchandise.

We are informed by Dr. Miller, of New York, that the yellow fever in America always begins in the lowest part of a populous mercantile town near the water, and continues here without much affecting the higher parts. It rages most where large quantities of new ground have been made by banking out the rivers, for the purpose of constructing wharfs. The appearance and prevalence of the yellow fever in low situations, have led to the belief, he tells us, that the disease was imported by ships from the West Indies. But a person seized with this fever in an affected part of the town, and conveyed to one that is healthy, or carried into the country, does not communicate it, he asserts, to the neighbourhood, nor to those immediately around him. He therefore is of opinion, that the yellow fever is generated by the impure air or vapour which issues from the new-made earth or ground raised on the muddy and filthy bottom of rivers, and which deteriorate the air above it, in like manner as air becomes offensive and injurious when it approaches or passes over a body of vegetable or animal matter in a state of putrefaction.

It appears that the shores of the rivers of New York and Philadelphia have undergone great and rapid alterations from their natural state within a few years, on account of the vast increase of commerce, and for the sake of making wharfs; and Dr. Miller mentions, it is only in such parts where these alterations have taken place that the yellow fever has been produced. The parts where little or no alteration has taken place on the east and north river, and which continue in nearly their natural state, do not produce the yellow fever. He adds, eighty new wharfs have been made since the war; the consequence of which has been, that great quantities of filth and corruptible matter, deposited in the muddy bottom of the river contiguous to the shore, and which produced no ill effect while exposed to the air, and washed twice every four-and-twenty hours, have been covered

over several feet deep with new earth, and closely pent up so as to exclude the tide. It is in these places, and these only, that the yellow fever is produced, we are told.

On the other hand, we are informed by Dr. Hosack, the learned Professor of the Institutes and Practice of Medicine in the university, New York, as well as by Dr. Francis, and other physicians of eminence in America, that the yellow fever did not originate there from domestic causes, but was exclusively of foreign origin*, and contagious in a confined deteriorated atmosphere and unventilated situations. Dr. Hosack, indeed, in a still later publication†, has brought forward strong arguments, and in my opinion full evidence, that the fever in question arose from imported contagion, and neither was of domestic origin, nor the product of decomposed animal and vegetable matter.

Dr. Bancroft‡ is of opinion, that the only existing cause of yellow fever is the application of marsh miasma to the human body, and that the disease is really a marsh remittent fever. He thinks himself justified, from repeated observations, in concluding that the joint influence of marsh miasma, and of an atmosphere unusually and sufficiently heated, upon persons habituated to a cold or temperate climate, is, of itself, fully capable of causing an epidemic yellow fever, resembling that which has committed such ravages in the West Indies, the United States of America, and the south of Europe. We are told by him, that the common bilious remittent of hot climates, which is universally admitted to be the effect of miasma, differs from the yellow fever only by being less violent; that at the utmost their symptoms only vary in degree, and consequently the danger being greater in the latter than the former, for the yellow colour appears in both.

Some have imagined, that the fever, which has occasioned such devastation, is totally of a different nature from the yellow fever formerly met with in the West Indies and other tropical climates; but in my opinion it seems to be the same, and that its only difference consists in its having prevailed as an epidemic, from the subsisting vitiated state of the atmosphere, and from its having, from other concurring circumstances, acquired a degree of malignancy and virulence unknown before.

During a residence of nine years in the West Indies, from 1776 to 1785, I had frequent opportunities of meeting with the yellow fever among seamen, and such new-comers as were imprudent on their first arrival; and although the disease never prevailed during that period epidemically, still I looked upon it as capable, under certain circumstances, of being communicated from one person to

* See American Medical and Philosophical Register.

† See his Discourse on the Medical Police of the City of New York.

‡ See his Essay on the Disease called Yellow Fever.

another. We ought to be aware that a fever, not contagious at its commencement, may acquire that character from confined air, filth, and accumulation; then why deny that the same may take place during the prevalence of typhus icterodes? I think it ought to be admitted, that the fever which has prevailed of late years, both in America, the West Indies, and Spain, is a contagious or communicable disease in an impure atmosphere; but where great cleanliness is observed, and the air preserved pure and free from noxious particles and materials, by a free ventilation its contagion may be counteracted. The admission of this doctrine will readily account for the apparently contradictory facts which have been brought forward by the advocates of the two opposing opinions.

As by removing a patient labouring under this fever to a healthy situation, and keeping him very clean, and the apartment well aired, those who are inmated with him rarely become affected, it has been assigned by some practitioners as a reason why this fever cannot be considered of a contagious nature. During its first stage, probably it may not; but still I am of opinion, that whatever may be the original nature of the yellow fever, as well as some others, if permitted to run a protracted course, it may by a neglect of cleanliness and ventilation become highly contagious in its after stages.

It is probable that marsh exhalations, and the effluvia arising from putrid vegetable and animal substances, under a concurring vitiated state of the atmosphere, were the causes which gave rise to this fever; and that it was afterwards kept up by contagion, heightened, by various accidental circumstances, to a pestilential degree of violence. Very hot and sultry weather, with a long drought; will greatly predispose to the prevalence of this fever as an epidemic in all tropical climates; and it may have a similar effect in America, where the summer months are intensely warm.

It has been ascertained, from tables and records for the last twenty years, that in Philadelphia the yellow fever does not prevail when the months of June and July do not exceed 70° Fahr.; but that in every summer since 1793, whenever the average heat of those months has exceeded 79°, then the fever has raged, and that it has been most mortal in those years in which the thermometer has indicated the greatest altitude.

Dr. Rush and a few others are of opinion that the yellow fever is not contagious in its simple state, and that it spreads exclusively by means of exhalations from putrid matters, which are diffused in the air: and Dr. Bancroft tells us, that of the many thousands who in the West Indies, as well as at Charlestown, Norfolk, Baltimore, Philadelphia, New York, &c., were removed beyond the reach of marsh miasma, whilst labouring under the disease, or after having imbibed the poison, though in many of these the disorder appeared under its worst forms, and proved fatal, still it has never been communicated to others. This point, however, has by no means been satisfactorily established; and some facts which have been brought

forward by Sir James M'Gregor*, and others, which are inserted in the American Medical and Philosophical Register†, very clearly shew that this fever may be communicated by contagion. Moreover, the Reports of Sir James Fellowes, lately published, tend completely to refute the very mischievous doctrine, that the pestilential fever of America and Spain, &c., is not contagious. Whoever will take the trouble to peruse Dr. Gilbert Blane's letter to the Admiralty, bearing date the 15th of December, 1823, with respect to what occurred on board two ships of war at the Island of Ascension, must be fully convinced of the contagious nature of the yellow fever. It places this beyond a possibility of doubt.

Contagion, perhaps, may not be necessary to originate the yellow fever, or it may not propagate the disease, unless aided by exterior circumstances favourable to its agency; but we want facts of a more positive kind, in order to prove that no virus is formed in the body of an individual labouring under this fever, capable of impregnating another with a certain quantum at least, if not kind of disease.

By diffusion in the open air, the disease may rarely be communicated from one person to another in country situations, where there is a constant circulation of fresh air; but in confined and unventilated situations, where cleanliness is neglected, I am decidedly of opinion that its contagion may as readily be propagated as that of typhus gravior, the gaol or hospital fever.

Several of the distinguished writers on yellow fever have asserted, that the constitution is invulnerable to the operation of its contagion a second time; but this point has not been satisfactorily ascertained. If a fact, (which I greatly doubt,) the exemption may possibly be the result of the reduction of the plethoric constitution of the new-comer, which at first so much predisposed him to an attack of the disorder.

The persons most liable to be attacked by this fever in the West India Islands, were the Europeans who had lately arrived; and hence it was, that the troops sent out to recruit our armies, and the seamen to strengthen our fleet, fell its earliest victims. Women were observed to be less liable to its attacks than men, and children still less so than these; and the people of colour were by no means so apt to be seized with it as the whites. When the disease did appear among them, it was always much milder, owing most likely to their necessary temperance. Persons of a full plethoric habit, and that were intemperate in their mode of living, were much greater sufferers by it than those of a lax fibre, and who were guilty of no irregularity. Young people born in the West Indies, and educated in Great Britain, and persons having resided some years in England, after they had passed a great part of their lives between the tropics, were

* See his Medical Sketches.

† Volume II. page 22.

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observed to be liable to an attack of this fever on their return to the West Indies.

There is evidently something peculiar to the constitution of people from a cold country, which renders them more obnoxious to fever in a warm climate than either the natives, or those who have been assimilated to it by a long residence. Accordingly we find, that the same exposure to the causes, predisponent and occasional, will produce fever in a stranger, while the native or old inhabitant remains in good health; and the symptoms will be tenfold more urgent in the one than the other, supposing both are attacked. Hence it happens, that long residents, and natives in general, are not very liable to the yellow fever in its continued and malignant form; but when they are attacked with the remittent of the country, the symptoms partake more or less of the nature of the prevailing epidemic. In persons of the former class, the body, from long exposure to the influence of the climate, has become creolized, approaching to the conformation of the natives, by having their original firmness of fibre reduced to the appropriate standard for continuing the healthy action under exposure to preternatural heat.

The heat of the body of new-comers in the West Indies has been noticed, by Dr. M'Kitrick, to be between three and four degrees above that of the temperature of the natives; and to this he ascribes, in part, the predisposition of new-comers to the yellow fever. A disposition to take on an inflammatory action has been assigned, therefore, as the reason why Europeans, within the first few months after their arrival in the West Indies, are so obnoxious to this fever.

Not only does the yellow fever invade Europeans newly arrived in the West Indies, in preference to creoles, negroes, and those who by a long continued residence have become acclimated, but even among those Europeans who happen to be susceptible, the most healthy and robust; and in general those who are earliest subjected to great exertions, and a high degree of temperature, are soonest seized, and more rapidly destroyed, than those of laxer fibres, or those who have had an opportunity of becoming more gradually inured to the climate.

In North America it also happens, that the inhabitants who constantly reside in the most southern States are seldom attacked with this fever in its violent form, while those of the north-east States are destroyed by it in great numbers; but even in these districts it has been remarked, that it more readily seizes strangers from Europe, or peasants from the interior provinces, than the natives of the towns in which the disease prevails. The inhabitants of the southern States, from being subjected to constant heat, approach in constitution nearly to the creoles or natives of the West Indies; but those residing in the more northern States, although exposed to a high degree of heat during the summer, can never become creolized, (if the expres-

sion may be allowed), on account of the intervening winter, which annually renews the predisposition, and creates a susceptibility to the disease; still, from living during a part of the year in excessive heat, the inhabitants of the place where the disease prevails are in some degree less susceptible of the most malignant form of the fever than strangers from Europe, or peasants from the inland districts, whose more dense and rigid fibres render them peculiarly predisposed.

It is therefore obvious, that the strongest men, those of the most dense and rigid fibre, are particularly subject, both in America and the West Indies, to the high degree of the yellow fever; and are most frequently and rapidly destroyed by it. Women, children, convalescents from former malady, and those who have been reduced by the use of mercurial remedies, are less frequently the objects of its attack; and when it happens to seize them, it is usually milder, and less rapid in its progress. In these classes, the state of the animal fibre, either from original conformation, or from eventual circumstances, more nearly approaches to that of the creoles and natives*.

Dr. Pinckard, who was a physician to the army in the West Indies, from having observed this fever exhibited such instability, and varied so incessantly in its character, that he could not discover any one symptom to be decidedly diagnostic, has been induced to offer it as his opinion, that the yellow fever so called is not a distinct or specific disease, but merely an aggravated degree of the common remittent or bilious fever of hot climates: rendered irregular in form, and augmented in malignity, from appearing in subjects unaccustomed to the climate.

Dr. Jackson also views this disease as only a modification or very high degree of the common fever of the country.

The yellow fever is excited into action by a variety of causes; the chief of which are, intemperance, excessive fatigue in the sun, checked perspiration by being exposed to a current of air, or sleeping exposed to the dews, costiveness, &c. In fact, whatever proves an exciting cause of fever in any country, is equally so in the West Indies, but it is not the same species of fever that is generally induced.

The yellow fever usually attacks with lassitude and weariness, chilly fits, listlessness of every thing around, faintness, giddiness, flushing of the face, redness of the eyes, pains in the eye-balls and lower part of the forehead, as likewise in the back, debility, and sighing, thirst, and a tendency to coma; the urine is high-coloured, small in quantity, and turbid; the perspiration is irregular, interrupted, and greatly diminished; the saliva is viscid: the tongue is covered over with a dark fur; the bile is secreted in unusual quantities, and thrown into the stomach, from which it is again speedily ejected; and the skin is hot, dry, and hard.

* See Notes on the West Indies, by George Pinckard, M.D. Letter LIV.

The disease continuing to advance, the eyes become of a deep yellow; the face and breast are tinged with the same hue; an incessant retching and vomiting of frothy bile ensues; great costiveness prevails, and peculiar delirium arises, which is attended with a permanent dilatation of the pupils of the eyes.

There is hardly ever an evident remission until the fever has entirely gone through its first stage, which is generally in thirty-six or forty-eight hours; when there is often such an abatement of the symptoms as to induce the patient to think himself tolerably well: but an early recurrence of the symptoms in an aggravated form, accompanied with extreme debility, soon convince him of the contrary.

In the last stage of the disease, the greatest debility prevails, and symptoms of universal putrefaction arise; large patches of livid spots are to be observed on different parts; the tongue becomes dry and black, the teeth are incrustated with a dark fur, the breath is highly offensive, the whole body exhibits a livid yellow in many cases, but not in all; hæmorrhages break forth from the mouth, ears, and nostrils, dark and fetid stools are discharged, hiccups ensue, the pulse sinks, and death follows very quickly.

These are the usual appearances to be met with; but great irregularities have been observed by different practitioners. Dr. Chisholme mentions, that he often found patients, without any previous complaint, suddenly become giddy, lose their sight, fall down almost insensible, and remain in that state for half an hour and upwards; the body then became overspread with a cold sweat, and this was succeeded by intense heat, a quick, small, hard pulse, violent pain in the head, particularly in the forehead, great anxiety about the præcordia; the eyes were much inflamed, watery, protruded, and wildly rolling; the face was much flushed; there was great heat at the pit of the stomach, with nausea, frequent retching and vomiting, as also severe pains in the small of the back and calves of the legs.

During 12, 18, 24, or 36 hours, he found all these symptoms continue to increase, except the quickness and hardness of the pulse, which were not materially changed; and that they were then succeeded by general coldness, clammy sweats, and a greater or less degree of coma or delirium. Life, in this case, was lengthened out to sixty or ninety hours from the attack. A short interval of reason perhaps took place, the patient considered himself better, and flattered himself for the moment with the hope of recovery; but a fit, as sudden and as unexpected as the first, came on, during which he rolled his eyes dreadfully, foamed at the mouth, and threw out and pulled back his extremities in violent and quick alternate succession. Dr. Chisholme observed, that in general the patient expired in this fit; but in a few instances he recovered from it, and continued rational for a short time, when another has ensued and carried him off.

He noticed, that in a few instances the patient complained of violent pains in the testicles, and on examination, he perceived them much lessened in size and retracted, with an excoriation of the scrotum: now and then he found a remarkable change in the voice, and that it became weak and shrill; in a few instances he could discover little or no yellowness of the skin.

Dr. Rush says, the disease appeared with different symptoms in different people: he observed the premonitory signs of it were, costiveness, a dull pain in the right side, defect of appetite, flatulency, perverted taste, heat in the stomach, giddiness or pain in the head, a dull, watery, brilliant yellow, or red eye, dim and imperfect vision, a hoarseness, or slight sore throat, low spirits, a disposition to sweat at nights, or after moderate exercise, or a sudden suppression of night sweats. More or less of these symptoms frequently continued for two or three days before the patients were confined: and in some they continued during the whole time of the prevalence of the fever in the city of Philadelphia, without producing the disease. Many went to bed in good health, and awoke in the night with a chilly fit; many rose in the morning after natural and regular sleep, and were seized at their work, or after a walk, with a sudden and unexpected attack.

He observes, that it frequently came on with a weak pulse, and often without any preternatural frequency or quickness: and that, in some instances, it was so low as not to be perceived without pressing hard on the artery; in some cases, the pulse intermitted, and these intermissions occurred in several persons who were infected, but who were not confined by fever; in others, there was a more than ordinary slowness of the pulse, which was now and then accompanied with a dilated pupil of the eye. Hæmorrhages happened at the commencement of the disorder, chiefly at the nose and uterus: and as it advanced, the discharge of blood became more universal, and then issued from the gums, ears, stomach, bowels, and urinary passage.

Many complained of a dull pain in the region of the liver, but few felt any soreness to the touch, or pain at the pit of the stomach; in some, a determination of blood took place to the lungs, but the brain was chiefly affected with morbid congestion, which was indicated by the suffusion of blood in the face, redness of the eyes, dilatation of the pupils, pain in the head, hæmorrhages from the nose and ears, by sickness or vomiting, and by an almost universal costive state of the bowels.

With respect to the secretions and excretions, there appeared to be a preternatural flow of bile, which was discharged from the stomach and bowels in large quantities, and of very different qualities and colours, being in some cases yellow, and in others black. The urine was sometimes plentiful and of a high colour; sometimes it was pale, and at others it was small in quantity and turbid: moreover sweats of a yellow colour,

and highly offensive to the smell, often broke out. On the first and second day the tongue was invariably moist and white; but as the disease advanced, it became red, and put on a smooth shining appearance: towards the close, a dry black streak appeared in its middle, which gradually extended to every part of it.

The effects produced on the nervous system were different, according as the fever affected the brain, the muscles, the nerves, or the mind. In a few instances, apoplexy was induced, which usually proved fatal; tremors of the limbs, and twitching of the tendons, were common; delirium was a frequent symptom, but many passed through the disease without the least derangement of ideas: in some cases, the pain in the head was acute and distressing; and the stomach, towards the close, was affected with burning or spasmodic pain of the most severe nature.

The senses and appetites exhibited several marks of the ravages of this fever upon the body. Deafness and dimness of sight sometimes took place. Thirst, and want of appetite, were present, as in most other fevers. The convalescence was marked by a sudden renewal of the propensity to venery*. Swellings in the inguinal and parotid glands took place in a few instances, which did not proceed to suppuration. In some cases, the skin was preternaturally warm; in others, it was cooler than in health. The yellow colour was by no means universal: when it took place, it was seldom to be observed before the third day, but more frequently about the fifth or seventh from the first attack. The eyes seldom escaped a yellow tinge. There were eruptions of various kinds on the skin, and, in the latter stage, petechiæ were common; carbuncles also took place in a few cases.

The disease ended in death in various ways. In some, it was sudden; in others, it came on gradually. The last hours of some were marked with great pain and strong convulsions; but, in many, death seemed to insinuate itself into the system with all the gentleness of natural sleep.

In every case that came under Dr. Rush's care, there were evident remissions or intermissions of the fever, or of such symptoms as were substituted for it. The disease continued for 15, 20, or 30 days in some people. He observed, that all were affected by it; but persons in the prime of life were most liable to it. Men were more subject to its attacks than women. He likewise observed, that the refugees from the West Indies universally escaped it; whereas the natives of France, who were settled in the city of Philadelphia, were much annoyed by it; and he found that the people of colour took the disease in common with the white people, but in them it was usually much milder.

* The same is frequently noticed on recovering from the plague.

Critical days were hardly ever distinguishable in this fever, nor was the crisis often very evident. Sometimes a copious perspiration put an end to it; and at others, the return of sleep, an hæmorrhage from the nose, or sudden diarrhœa, carried it off.

Dr. Fordyce was of opinion* that typhus icterodes ought to be regarded rather as an irregular semi-tertian than as a continued fever; for it often happens that a patient becomes greatly relieved, and appears to be recovering, when all at once a fresh attack takes place, and carries him off. He thinks that the dark brown colour of the skin in this fever arises rather from a greater secretion of the matter secreted by the sebaceous glands of the skin, than owing to a quantity of bile getting into the blood-vessels. In support of this opinion, he observes, that the colour is very different from that which takes place in jaundice. The evacuations from the intestines have not that clay-like appearance which is common in jaundice. The secretion from the kidneys has not that dark yellowish brown, nor that thick sediment, which have almost always been noticed in those persons in whom bile has got into the blood-vessels.

The dark brown matter which the patient throws up by vomiting, he thinks, has the appearance of the matter observed upon the tongue in very violent fevers; and that probably it is formed on the surface of the stomach, and perhaps of the duodenum, or even on the beginning of the jejunum. The force of the exertions in vomiting often occasions a greater quantity of bile to be secreted, and so to be thrown back into the stomach, and be brought up with the dark brown matter. When this happens, it gives to the fluid thrown up, he observes, the taste and appearance of bile. At other times, however, there is no appearance of bile at all, but only of this dark brown matter.

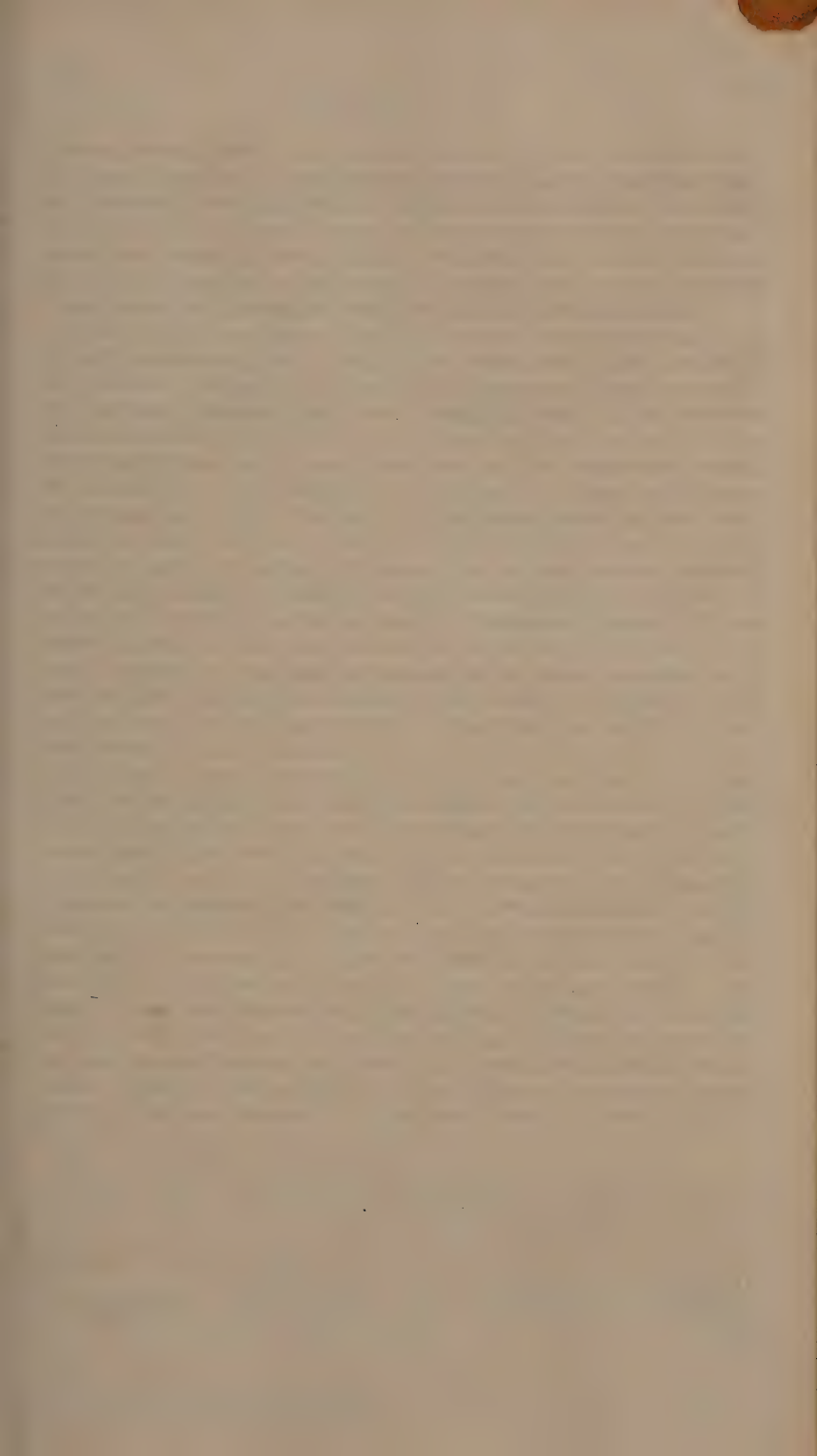
Dr. Bancroft is of opinion†, that the black matter thrown up in this fever is merely blood which has been effused from some of the small arteries, ruptured in consequence of the suppuration of certain portions of the villous coat, and has coagulated within the cavity of the stomach, or on the surface over which it was effused; and having been afterwards detached and triturated by the violent and frequent contractions of that organ in the efforts to vomit, has had its appearance as a coagulum of blood altered, and its colour darkened by the gastric juice, or by some chemical decomposition, either spontaneous or produced by the action of the air, or other matter contained in the stomach.

Dr. Jackson‡ thinks that the black colour of the matters ejected from the stomach, or discharged by the anus in the latter stages of this form of fever in the West Indies, owes its origin

* See his Fourth Dissertation on Fever.

† See his Dissertation on the Yellow Fever.

‡ See his Sketch of the History of Febrile Diseases, as they appear in the West Indies among the Soldiers of the British Army.



to an admixture with diseased secretions from the mucous membranes of the whole gastric system, more particularly of the liver. He observes, the secretion is ropy and clear during the early periods of the disease, becomes brown or black in the latter; sometimes black as soot, more particularly in persons where the head and stomach are simultaneously affected, and where no strong vascular action takes place during the course of the disease.

Concerning the nature of the black vomit, various opinions have indeed been entertained. Some have considered it as consisting of putrid bile; some as composed of a mixture of blood and bile; some of the villous coat of the stomach dissolved in the progress of inflammation, terminating in sphacelus; and others, of bile mixed with the septic acid contained in the alimentary canal. Dr. Cathrall, of Philadelphia*, considers all these opinions as erroneous, and offers it as his, that the black vomit is an altered secretion from the liver. We are informed by him, that the black vomit, or matter so called, appears to be of two kinds; one consisting of a number of flaky particles, resembling the grounds of coffee; the other, of a dark-coloured inspissated mucus. From various and repeated experiments, he concludes, that the black vomit, besides a considerable proportion of water tintured with resinous and mucilaginous substances, contains a predominant acid, which is neither the carbonic, phosphoric, or sulphuric, but hints it may be the muriatic.

It appears from Dr. Cathrall's experiments, that the black vomit, when applied to the most sensible parts of the body, produced little or no effect. It likewise appears that large quantities of this fluid may pass through the stomach and bowels of quadrupeds and other animals, without apparently disturbing digestion, or affecting the health. This fact incontestably proves the inactivity of this fluid, and renders it probable that the speedy death which ensues after this discharge in yellow fever, is not from any destructive effect of this matter on the stomach and bowels, but most likely from the degree of direct and indirect debility which had been previously induced. Another fact which has been proved by this gentleman's experiments is, that an atmosphere highly impregnated with the odour of the black vomit recently obtained, would not produce fever, apparently under the most favourable circumstances.

The yellow fever differs from typhus gravior in the following circumstances, viz. it usually prevails only during, or immediately after very hot seasons, in which typhus is soon extinguished; and it is in its turn completely annihilated upon the accession of cold weather, in which typhus is commonly most prevalent, particularly if accompanied with humidity of the atmosphere. It attacks most readily and violently the young and robust, over whom

* See the New York Repository for 1800, for his Memoir on the Analysis of the Black Vomit, ejected in the last stage of this fever.

typhus is allowed to have the least power; it begins with much greater exertions of the living power than typhus, is attended with many symptoms of a different nature, and it frequently changes into a regular remittent, and sometimes even to an intermittent fever, which true typhus is never observed to do.

It differs from the plague, in that it prevails only in those countries, and in those seasons, in which the heat is, or has recently been, so great as to destroy or stop the progress of the plague; in the inter-tropical climates, therefore, so favourable to the existence of the yellow fever, the plague is unknown. The glandular and cutaneous affections called buboes and carbuncles, so constantly accompanying the plague, are seldom met with in the yellow fever. A violent febrile paroxysm is essential to the character of yellow fever; whilst, according to the best authorities, persons have been attacked by the plague without having the least febrile affection.

In forming an opinion as to the event of the yellow fever, we must have in view the nature of the symptoms, the mode of attack, and the age and habit of the patient. Youth, and a plethoric state, are invariably circumstances of danger. A sudden oppression of all the functions at once; great debility; weak, irregular pulse; sighing; severe vomiting of dark matter; tremors of the body when moved, with a tendency to faint on the slightest exertion; pensive sadness in the countenance; and a dilatation of the pupils of the eyes, with coma; are signs of great danger. Very few recover from that stage in which a black vomiting is the prominent symptom. Black and fetid discharges by urine and stool, the breath being highly offensive, and the appearance of petechiæ, portend almost certain death.

The symptoms that we may regard as favourable are, a settled state of the stomach, lessened headach, eyes lively, appearance of an eruption on the skin, (known in tropical climates by the name of prickly heat,) free perspiration, copious and high coloured urine, bilious flux, and sound sleep. No disease, however, exhibits a greater variety of symptoms, and often less to be depended upon, than this; for sometimes it goes on with favourable appearances, then suddenly changes to the worst, and sometimes patients apparently almost in a state of convalescence, expire in a few hours.

Dissections of the bodies of those who have died of the yellow fever have shewn the coats of the œsophagus corroded; the stomach and intestines loaded with a black fetid matter, or both to be often much inflated, inflamed, and sphacelated; the liver, in many cases, to be shrunk to less than half its natural size, very flaccid, and of a colour approaching to buff; and the gall-bladder to be flaccid and greyish, having but little bile contained in it. In some instances the lungs have been found inflamed; and the bladder has been observed to be much thickened, and to contain a considerable quantity of urine. In those cases where there has

been a discharge by vomiting of a black coagulated matter resembling the grounds of coffee, the gall-bladder and biliary ducts have been found distended with the like substance. Where an affection of the head has formed a prominent feature of the disorder, the integuments of the brain have been observed more or less inflamed, the vessels of the dura and pia mater to be very turgid with blood, and occasionally there has been extravasation. Sometimes the volume of the brain has been found increased, and the substance of it more firm than usual.

The same difference of opinion which arose among the professional gentlemen of America, with regard to the origin of the disease, seems likewise to have subsisted between them as to the mode of treatment to be pursued; some recommending and adopting the antiphlogistic plan, by bleeding, purging, and a low diet; some, the stimulant plan, with a liberal use of the bark, wine, opium, and the cold affusion; and others, again, either purged moderately with calomel, or bled on the first or second day of the fever, and then resorted to a free use of bark, wine, laudanum, and aromatic tonics: and this practice they adopted on the supposition that the disease was inflammatory in its first stage, and putrid in its last.

According to the report of Dr. Rush, this last mode of treatment was scarcely more successful than the tonic and stimulant one; and that which he found to succeed best was the antiphlogistic, pursued even to a degree of extreme rigour; for we are given to understand, that although in some instances he allows of one or two moderate bleedings being sufficient, still, in most cases, he was in the habit of repeating the operation much oftener, and of drawing off a considerable quantity each time, even from the poor who resorted to his house for advice.

Whether or not bleeding may be practised with advantage to the patient in America, or to what length it may be carried, I am not capable of determining, never having been on that continent; but being well acquainted with the climate of the West Indies, from a long residence there, and having often met with the disease, (although not under its very malignant form,) I must concur with the objectors, who contend that, in tropical climates, venesection resorted to among the natives, and such others whose bodies and constitutions have been perfectly assimilated to the climate by a long residence, cannot in general produce a good effect: the reduction of tone, which a certain period of residence occasions in the constitution of Europeans, as well as of the natives, renders it unnecessary; but when this fever has attacked new comers of a vigorous constitution and in rude health, but more particularly soldiers and seamen, (who bear phlebotomy better than any class of people in private life,) then I am ready to admit, that the abstraction of blood soon after the seizure, or during the early stage, may be beneficial, if the quantity drawn off is in due proportion to the age, habit, and other circumstances

of the patient. When the fever is completely formed, or is of a longer standing than 36 or 48 hours, it will bid defiance to depletion by the lancet, and then, instead of proving serviceable to the patient, will be highly injurious.

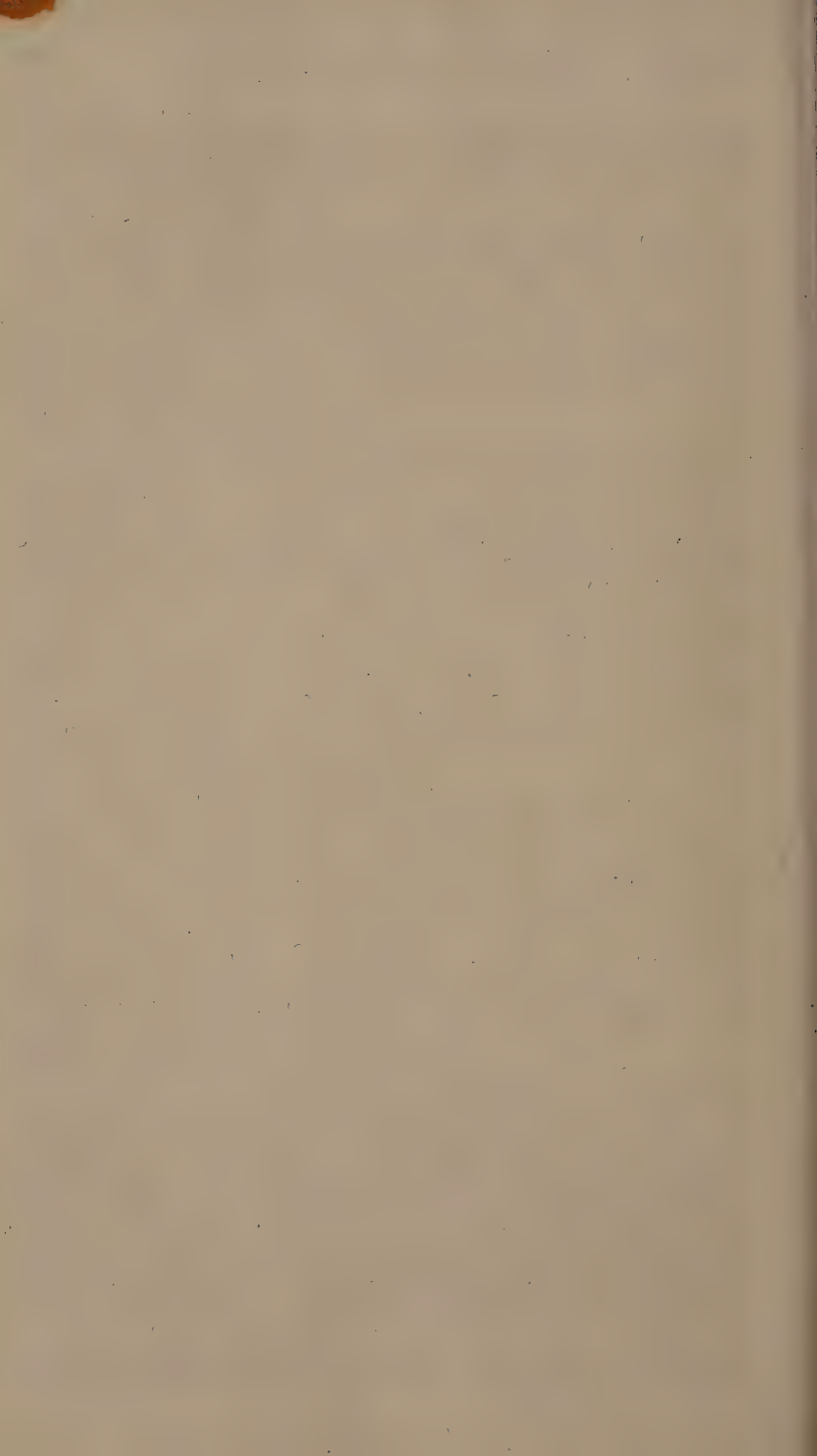
Dr. Clarke, in his treatise on this disease, mentions, that no native recovered when the lancet had been used; and Dr. Chisholme observes, that although the blood drawn, in the cases where this remedy was employed, appeared remarkably florid, and always threw up an inflammatory crust of greater or less thickness, and although the pains seemed to undergo a temporary mitigation, yet the consequence, at the expiration of a few hours, was always fatal, notwithstanding the patients were remarkably robust, florid, and generally in the vigour of life.

Dr. Hector M'Lean, who has likewise published on this fever, is one of the few West India practitioners who approves of bleeding.—He observes, that the determinations to particular organs which take place in the disease, and which constitute its greatest danger; the marks of inflammation, which dissections have shewn in the stomach and biliary organs, evidently point out the propriety of this evacuation. He adds, that experience confirmed its utility; for his practice was much more successful after he had adopted blood-letting, than before. By way of caution, he mentions, however, that it is only in the very early stages he thinks it advisable to have recourse to the operation, and that if it is not performed as early as the second, or at farthest the third day, he apprehends it will not be successful.

Dr. Jackson, in his Exposition of affusing Cold Water in the Cure of Fever, tells us, that he holds a subtraction of blood in large quantity to be a most decisive process in the more intense and concentrated forms of the endemic fever of the West Indies, and that the remedy produces a condition susceptible of being more readily acted upon afterwards by cold affusion, and the other means we may employ. He adds, that whatever may be the precise quantity necessary to produce the effect, it must always be supposed to stand high, and seldom lower than thirty ounces; in strong athletic European soldiers, recently transported to a tropical climate, sometimes far above it.

In a work* of a later date he mentions, that he is fully warranted by long experience and attentive observation to say, that venesection, prescribed with consideration and conducted with management in execution, is both a safe and powerful remedy, either decisive of curing from its own effect, or preparatory of the curative effect of others. If there be no prohibitory circumstances in the case, one bleeding, he says, is to be preferred to repeated small ones: for although the latter diminish violence, and thereby avert the destruction of organic structures, they do not prevent

* See Dr. Jackson's Sketch of the History of Febrile Diseases among the Soldiers of the British Army in the West Indies.



the diseased action from proceeding, in the regular process of what he terms coction, to a constituted period of formal crisis. He however readily admits, that bleeding in a large, or even in any quantity, is not invariably or uniformly either proper or safe.

A late writer* on the yellow fever says, that it is only by a copious abstraction of blood employed while the fever is forming, or within a short time after it is formed, aided by purgatives, and by the cold affusion if indicated, that we can entertain any plausible expectation of arresting a disease where the morbid motions are of such rapidity and power. He very properly observes, at the same time, that the ability with which men bear the loss of blood will much depend upon the habit and locality, and its efficacy on the early stage of the disease.

Dr. Bancroft is of opinion that bleeding may be resorted to in certain cases of the yellow fever, not only with safety but advantage, and he quotes himself as an example; but, he says, that the propriety of the operation, and the quantity of blood to be taken away, must be determined by the circumstances of the patient.

On a more intimate acquaintance with this species of fever than physicians possessed at first, many of those who have had most experience in attending patients labouring under the disease, now approve of venesection at the onset, or soon after its seizure.

To obviate the inflammatory diathesis which prevails during the first stage of the disease, and to take off the determination from the head, as well as to cleanse the primæ viæ of acrid and offending humours, we may employ gentle purging, so as to procure one or two evacuations daily during the continuance of the fever; but as the stomach is seldom in such a state as to be capable of retaining those purgatives which are in common use, besides a triple dose being generally necessary, it has been found best to administer the hydrargyri submuriæ, either by itself, or combined with jalap or extract. colocynth. c. as below†. If the first dose does not operate in due time, it is to be repeated. At the end of six hours or so, if the purgative has not yet been attended with the desired effect, it ought to be assisted by an enema, giving at

* See Treatise on the Causes of the Tropical Endemic or Yellow Fever, by J. H. Dickson, M. D.

† 1. R Hydrargyri Submur. gr. iv.

Pulv. Jalap. gr. viij.—xvj.

Syrup. Zingib. q. s. M.

ft. Pulvis pro dos.

Vel,

2. R Hydrargyr. Submur. gr. vi.

Extract. Colocynth. C. gr. x. M.

Fiant pilul. iij.

† 1. Take Submuriate of Mercury, four grains.

Powder of Jalap, from eight to sixteen grains.

Syrup of Ginger, a sufficiency to form a powder for a dose.

Or,

2. Take Submuriate of Mercury, six grains.

Compound Extract of Colocynth, ten grains.

Mix them together, and form the mass into three pills.

the same time by the mouth about an ounce of magnesiæ sulphas dissolved in a little mint water.

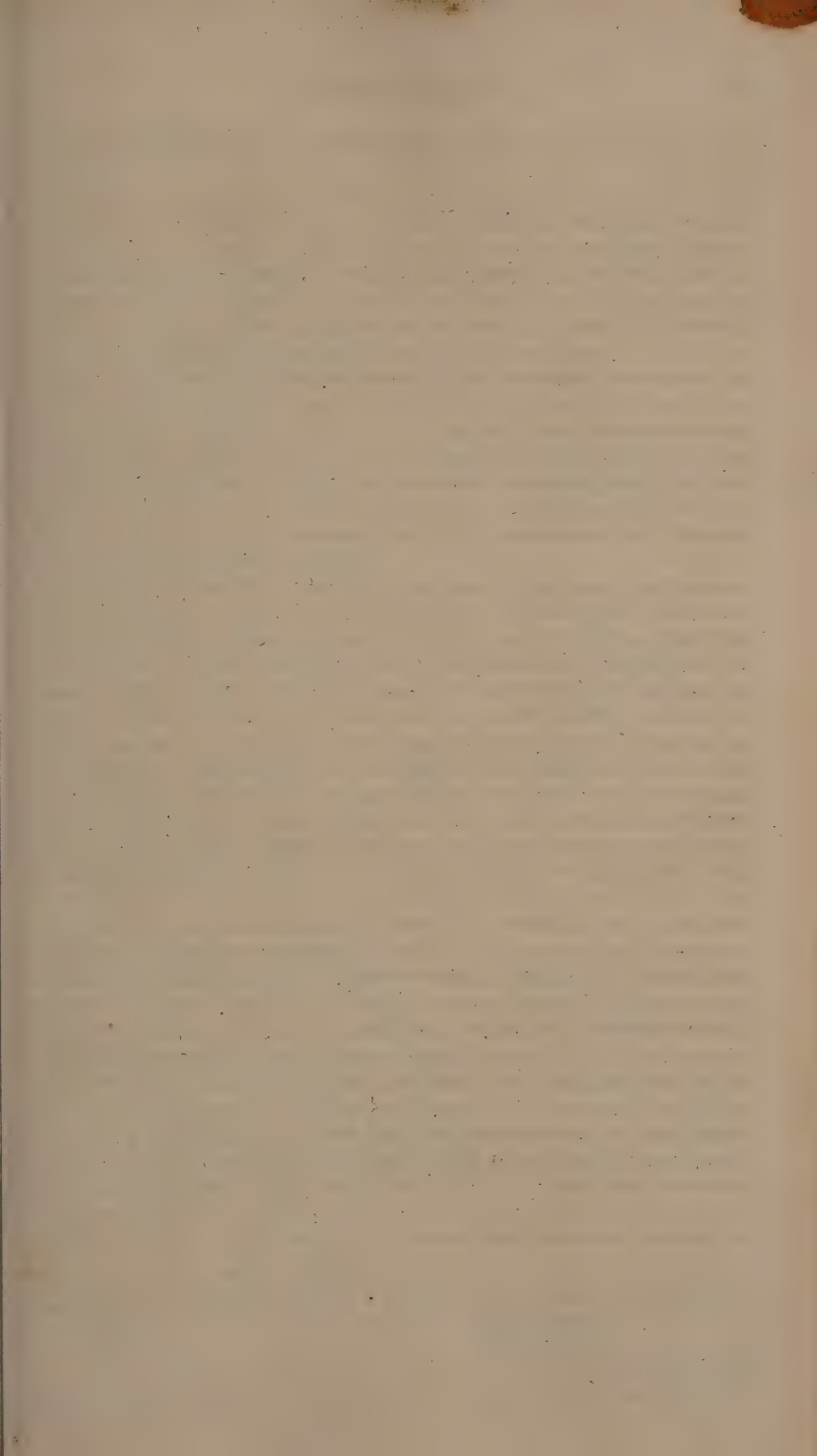
In no stage of typhus icterodes can emetics be administered with safety, owing to the disposition to vomit which usually prevails, and which it is often difficult to allay. Instead of prescribing emetics, we are to endeavour by every possible means to calm and allay the irritation of the stomach.

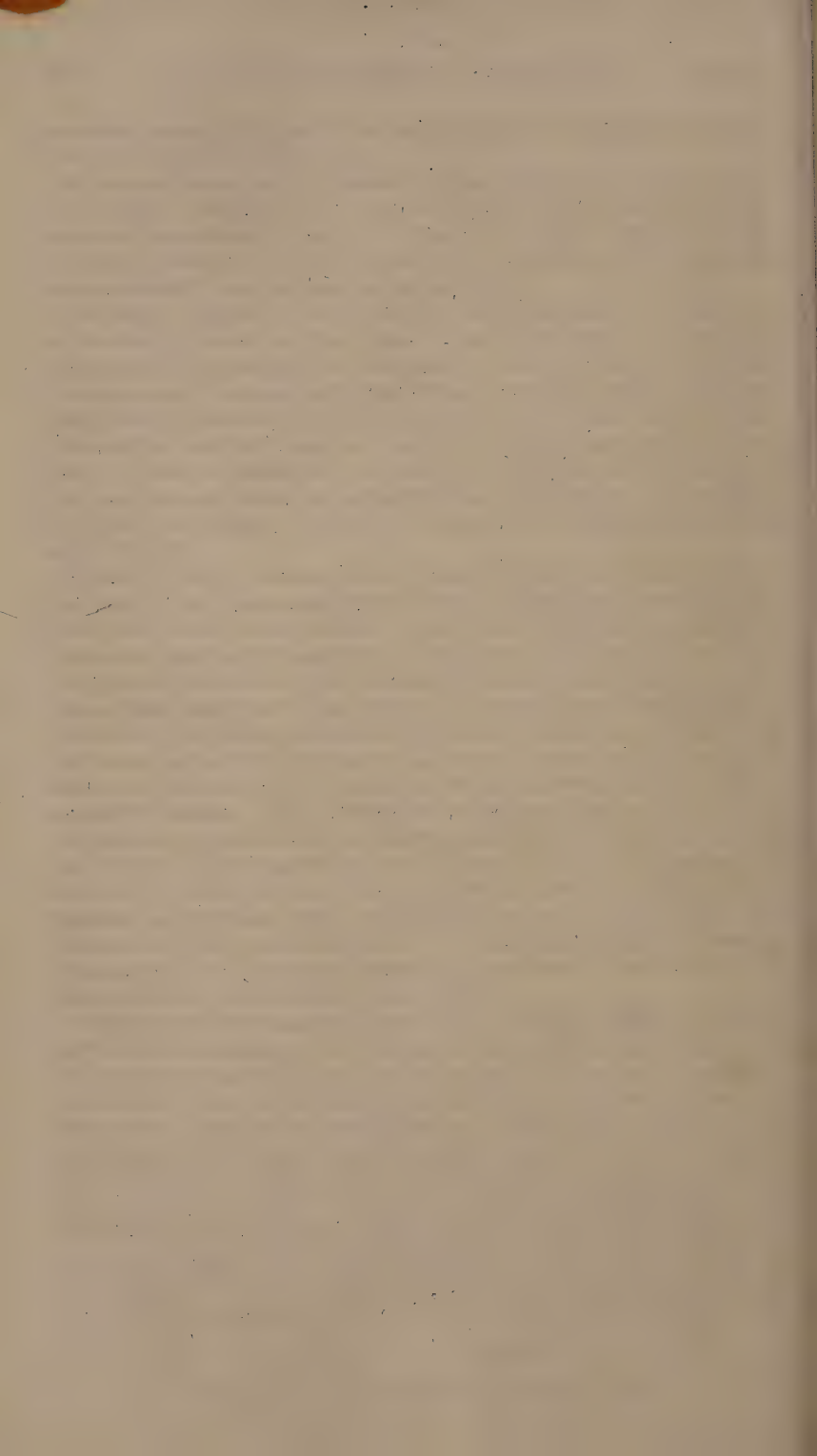
As there appears to be a morbid determination of febrile or inflammatory action in this disease upon the intestines, we may endeavour to counteract this disposition and produce an opposite determination by suitable diaphoretics, combined with opium in small doses, assisted in urgent cases by the warm bath, warm fomentations and a blister on the belly: taking care, at the same time, to promote sufficient evacuations by stool, in order to relieve the intestines as much as possible from all irritation and uneasiness which they might suffer by a retention of hardened fæces and other matters.

Mercury being known to be a kind of specific in local inflammations of the liver, and there being evidently a great determination of blood to this viscus in the yellow fever, practitioners have been induced to employ it likewise with the view of exciting a degree of salivation; and where an incessant vomiting has prevented their using the submuriate of mercury in sufficient doses to effect this, they have substituted mercurial frictions. In some of the cases, where the hydrargyri submurias was administered with this view, its quantity was obliged to be increased to an almost incredible extent. Dr. Chisholme mentions a case, where 400 grains were given before the salivary glands were affected; and in the Medical Commentaries for the year 1795, Dr. Duncan, of Edinburgh, takes notice that a correspondent in Jamaica had reported an instance where, within the space of a few days, the patient had taken 270 grains of it, and had rubbed in twenty drachms of the strongest mercurial ointment, from which the happiest effects were at last produced.

On such authorities, and from the well-known efficacy of mercury in inflammations of the liver, it may, probably, be a proper and valuable remedy in typhus icterodes. To ensure its success, it should, however, be employed at the very commencement of the disease, and be so conducted as to affect the mouth before the dangerous symptoms of the second stage of the fever make their appearance. Dr. Currie, of Philadelphia, informs us*, that in every case in which he has seen mercury employed after the distressing and dangerous symptoms of the second stage had come on, it aggravated them and increased the danger; and that when resorted to after signs of what is called putrescency have made their appearance, it has invariably accelerated the fatal

* See vol. ix. page 102, of the Med. and Phys. Journal.





event, notwithstanding the declaration of Dr. Chisholme to the contrary.

In having recourse to mercury externally, we may direct half a drachm, or even a drachm of the strongest ointment to be rubbed into the thighs, hams, legs, and arms, every four hours; and we may give hydrargyri submuriat. internally, either by itself, or combined with opium*, according to the state of the bowels. When a gentle ptyalism takes place, its use ought immediately to be omitted, and only nourishment and wine be given.

That many patients have recovered by a mercurial treatment, if early adopted, appears from Dr. Chisholme's excellent work, as well as from the practice of the naval and military hospitals in the different West India islands, and the reports given in by various private practitioners. In typhus icterodes, possibly, there may be congestions in the liver, both from an accumulated and imperfect secretion of bile; and mercury certainly possesses very stimulating and deobstruent qualities.

We are told by Dr. Bancroft, however, that mercury administered so as to produce a salivation, appeared to him to be extremely equivocal in its operation. He is of opinion that the good effects of the mercurial treatment have been greatly exaggerated; that many persons have died of this fever, although mercury administered externally or internally had produced a copious salivary discharge; and that in many others who have recovered, the discharge did not begin until after a solution or great mitigation of the fever, and therefore could not have been the effect of the salivation. He, however, deems the use of mercury as a purgative highly beneficial, and into this quality he is strongly disposed to believe its reported efficacy in all fevers is to be resolved.

At the first commencement of typhus icterodes, it is not unusual for a frequent vomiting to prevail. In such cases it may be advisable to wash out the stomach with an infusion of the flores anthemidis; but should it continue, stupor, wrung in a warm decoction of bruised poppy-heads, with an addition of one-third part of camphorated spirit, may be kept constantly applied to the region of the stomach, and the saline medicine be administered (so as that the effervescence shall take place in the stomach) with an addition of about ten or twelve drops of tinctura opii to each dose. Sulphuric æther has been given, and even ardent spirits are sometimes administered with partial relief, as the heat and vascular action subside.

Warm clysters made of mucilaginous and aromatic vegetables

* 3. R Hydrargyri Submuriat. gr. ij.—iv.

Opium, gr. ss.

Confect. Rosæ, q. s. M.

ft. Pilula, 4tis horis repetenda.

* 3. Take Submuriate of Mercury, from two to four grains.

Opium, half a grain.

Confection of Roses, a sufficiency to form a Pill, which is to be repeated every four hours.

infused in boiling water, with an addition of sixty or eighty drops of the tincture of opium, have been attended with the most immediate and sensible benefit in cases where vomiting, oppression about the præcordia, and great irritability appeared to be owing to exhaustion from too copious depletion.

In cases of great irritability of the stomach, where excessive vomiting prevails, the early application of a blister immediately over the part may be attended with the best effect; but this remedy is in general applied too late, and a determination to that important organ is suffered to take place before any attempt is made to counteract it, which at last proves too powerful to be removed.

In some instances the vomiting has been known to cease upon the application of a large poultice of mustard-flour to the stomach and feet, which occasioned a very extensive and painful inflammation of the skin.

By employing cold affusion on the first onset of typhus ictorodes, we may, probably, in some instances, arrest its progress, and interrupt the morbid actions; and even in cases of some days' continuance we shall be able, by means of it, to abstract heat, induce sleep, and recruit the animal powers. In an advanced stage, it will be best to substitute aspersion, or ablution with a wet sponge. In all cases where there may be the smallest danger of arresting the movements of life by either affusion or aspersion, a glass of wine, or some other more powerful cordial, should be taken immediately after using the remedy.

Cold water is certainly a very efficacious remedy in this fever, and when applied externally, affords very great relief to the feelings of the patient, who is frequently distressed with a sensation of burning heat; the temperature of the skin, at the same time, being actually raised some degrees of Fahrenheit's thermometer above the natural standard. It is, however, only when the heat of the body is above the natural standard, that cold water should be applied externally; and the period of its application and the frequency of its repetition must be determined by the feelings of the patient; for should he become chilled by it, much mischief might ensue. To avoid any fatigue to the sick, which the usual mode of applying this remedy is apt to induce, a late writer* on this fever recommends as a useful substitute, that the patient should be covered as he lies in bed with a single sheet wetted with cold water, which by evaporation will gradually reduce the temperature of his body to a proper standard.

Dr. M'Lean has seen the best effects to arise from cold affusion in this fever, and tells us that, in order to heighten its power, he often premised the warm bath; and while the patient was sitting in it, he dashed two or three buckets of cold water suddenly on him. In those cases where the remedy was happily applied, the

* See Dr. Bancroft's Essay on the Yellow-Fever.

general effects observed from it were, an improved recollection, greater cheerfulness of aspect, a diminution of heat and anxiety, the pulse becoming more full and equable, a tendency to sleep, and sometimes a distinct remission.

Some communications of Dr. O'Leary, through the medium of the *London Medical Journal**, further establish the good effects of the affusion of cold water in typhus icterodes. We are told by him, that he was ordered, soon after his arrival at Barbadoes from Europe, to attend the sick of the 70th regiment at Antigua, where, on his arrival, he found they amounted to about a hundred. They were chiefly affected with the yellow fever, and the mortality had been very great; but on his employing cold affusion judiciously, agreeably to the rules advised by Dr. Currie (see Typhus Mitior and Gravior), very few died afterwards. He mentions, that so sensible were the men of its efficacy being superior to any other remedy, and of the relief obtained from it, that in his absence they frequently entreated the officers, when duty led them to visit the hospital, to have it repeated on them.

In a short history of the yellow fever which prevailed at Norfolk in America, and communicated by Drs. Selden and Whitehead to Dr. Miller of New York†, further testimony in favour of an early use of the cold affusion is produced. From the great benefit which these physicians experienced in their two or three first trials of it, they proceeded to recommend it afterwards with confidence. They have reported, that of all those patients to whom they had an opportunity of exhibiting this remedy on or before the second day of the attack, they had the good fortune not to lose one; but after this period, when the fever had begun to subside, without symptoms of amendment, the affusion of cold water seemed to hasten the fatal catastrophe. In no instance did they employ the remedy in question without the exhibition of calomel at the same time. No disagreeable effect was produced by combining the use of calomel with the affusion of cold water; nor did the mercury occasion a salivation in a single instance, although the discharge from the bowels was scarcely as great as when it was used alone in the cure of the disease.

In temperate and cold climates, where we employ affusion it will be sufficient to take the water fresh from the spring, pump, or the sea: but in warm climates, in order to command the full and expected effect, it will be necessary that its temperature be reduced to a low degree (as about 40 of Fahrenheit's thermometer), by exposing it to the night air previously, or by adding some salt to it.

Much benefit will probably be derived from cold water taken internally as drink: small quantities of which, frequently repeated, have been observed to moderate the excessive heat of the body, as

* See vol. xvi. page 490.

† See vol. x. page 266, *Med. and Phys. Journal*.

well as the violence of general febrile action and thirst; it is likewise efficacious in disposing the skin to perspire gently, and in preventing inflammation and irritation of the stomach.

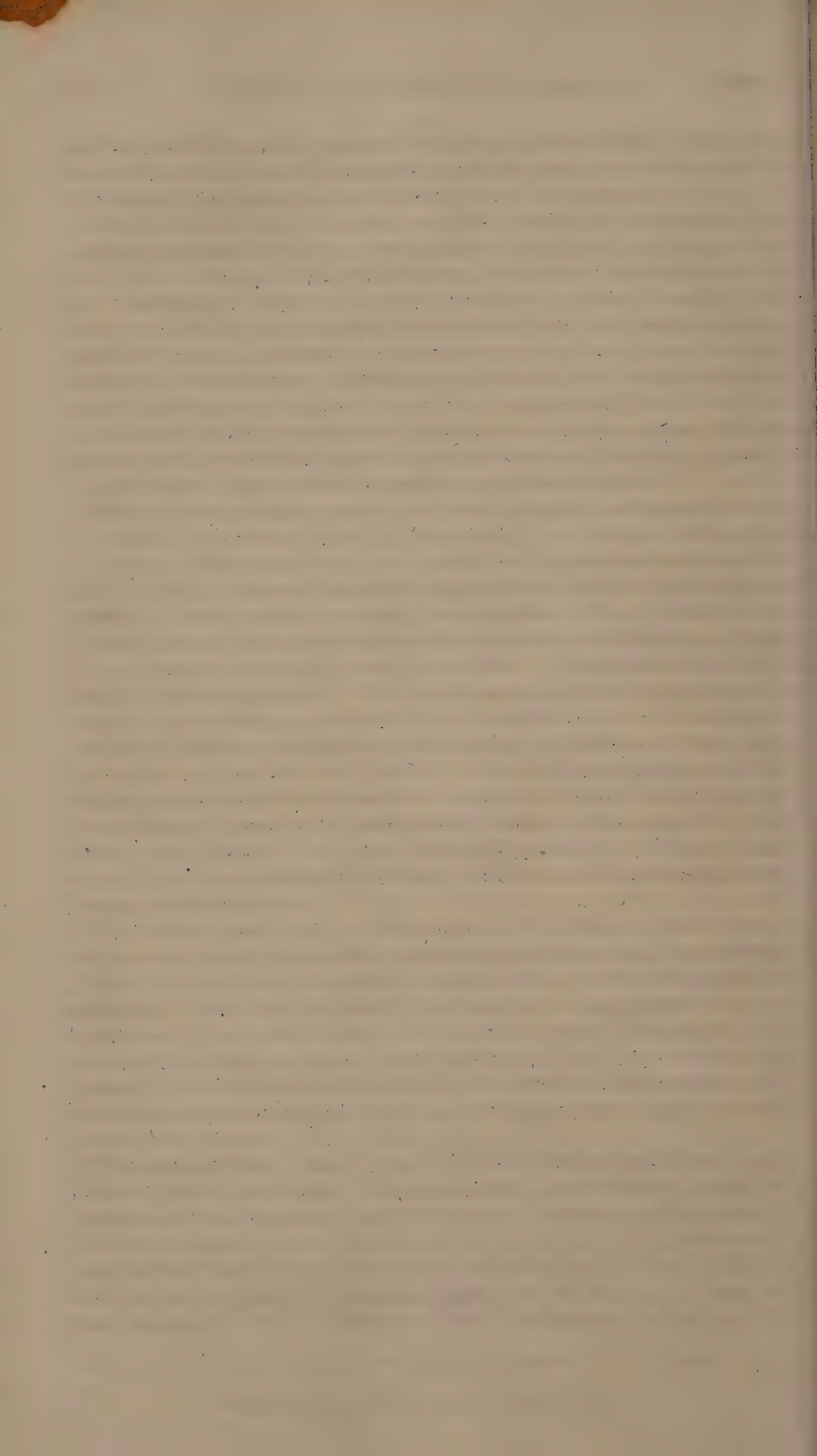
For reducing the temperature of the body to its natural and healthy standard, and for producing a refrigerant effect in this and other fevers of the typhoid type, we have been informed by Dr. Cumming*, that he has derived the highest benefits from either sprinkling or sponging the bodies of the sick with ardent or rectified spirits, and that he considers these to be in every respect superior to cold water. The effect, no doubt, will be quicker from using spirit, as the evaporation will be more rapid; but it has been questioned, and very properly, whether or not the great advantages which are derived from the cold affusion or washings, are to be attributed solely to the abstraction of heat in fever.

Should proper means not have been adopted sufficiently early, or should they have failed in procuring the desired effect, and symptoms of putrefaction have made their appearance, our endeavours must be directed towards stopping the putrid disposition of the fluids by the most powerful antiseptics. West India practitioners have of late administered the capsicum, in the form of pills, as a stimulant, and with very good effect. Spirituous baths have likewise been employed. The cinchona bark must be given in as large doses as the stomach will bear; and if it will not retain any quantity, either in substance, decoction, or infusion, it may then be given in the form of clyster. A pint of decoction, made by boiling an ounce of the powder in a quart of water, until one half is evaporated, may be injected every three or four hours. Acid fruits may likewise be given liberally; and the ordinary drink should be wine, sufficiently diluted with water and acidulated with lemon or orange juice.

The mineral acids might likewise be serviceable in this fever, as well as in typhus gravior and scarlatina anginosa, and I much wish that a fair trial may be made of them, but more particularly the muriatic, in an early stage of the disease. The sooner it is administered, the more likely will it be to prove efficacious. Its wonderful effects in other malignant disorders I have often witnessed; and typhus icterodes being evidently of this nature, is it not reasonable to suppose that its use might prove highly serviceable in this also?

Throughout the whole course of the disease, but more particularly under the above circumstances, the strictest attention ought to be paid to cleanliness, by not only changing the patient's linen frequently, and immediately removing and emptying whatever comes from him, but likewise by sprinkling his chamber every now and then with warm vinegar, and allowing a perfect and free ventilation of air through it. To destroy contagion, and

* See Med. and Phys. Journal, vol. xviii. p. 197.



assist in correcting the fetor, the gaseous fumigations recommended under the head of Typhus Gravior ought to be employed.

The patient's strength is to be supported throughout the disease with preparations of barley, sago, tapioca, Indian arrow root, &c., mixed with wine; and his thirst allayed by a liberal use of barley water, common water, or any other grateful beverage.

Dr. M'Lean observes, that he always found opium to be injurious in the beginning of this fever, although restless nights and anxiety often tempted him to prescribe it in large doses. It procured no settled rest: for a time, the delirium was increased, to which stupor rather than sleep succeeded: and the next day, languor, irritability, and weakness prevailed. When remissions had commenced, and where a return was apprehended, he gave opium freely, and apparently with a good effect. It was likewise useful when convulsions took place, and to procure sleep towards the decline of the disease.

When a severe headach, with great depression of spirits, is complained of, camphor and æther may probably be administered with some advantage. In cases where violent delirium prevails, the application of a blister to the neck or shoulders may be advisable; but where there is only coma, this remedy will not be necessary.

When remissions are obtained, and the disease shews a disposition to yield, the cinchona bark, joined with sulphuric acid, may be taken with advantage; and its use should be continued during the whole stage of convalescence, which is often tedious and long, owing to the great debility that is always left behind, and from which the patient cannot readily recover, unless by a change of climate.

Quassia in a cold infusion is a valuable medicine during convalescence, and here the cold bath may also be serviceable.

The cortex cuspariæ has likewise been found a useful medicine towards the close of this fever, when debility is the chief symptom. An infusion of it* sits easy on the stomach, and is attended with the most beneficial effects in restoring the strength and appetite. Other tonics may be used at the same time: for these, see Dyspepsia.

In recommending a use of the cortex cuspariæ, it appears worthy of observation to guard practitioners against a spurious species of it met with in the trade, and which proves of a deleterious and poisonous quality. That of a safe nature, and commonly used, is a thin smooth bark, of a yellowish colour in the fracture, and of a bitter aromatic taste. The poisonous kind is

* 4. R Infus. Cuspariæ, f. ʒv.

Tinct. Cinchon. f.

— Calumb. f. āā ʒss. M.

Capiat Coch. magna ij. ter quaterve in die,
cum Acid. Sulph. Dilut. ℞ xvi.

* 4. Take Infusion of Angustura Bark, five ounces.

Tincture of Peruvian ditto,

— of Calumba, each half an ounce. Mix them.

The dose may be two table-spoonfuls three or four times a day, adding about twenty-four drops of Diluted Sulphuric Acid.

less thick, a white, or yellowish white bark; in the fracture grey, on the inner edge yellowish, partly approaching to brown, of an unpleasant bitter taste, and hardly possessing any aroma. The effects of the spurious and bitter cusparia, both on mankind and animals, are pretty much the same with those produced by the nux vomica.

Some years back, a fever of a highly malignant nature made its appearance at Gibraltar, as well as at Cadiz and Malaga, and destroyed some thousands of the inhabitants. By some practitioners it was supposed highly contagious*, by others again not so. Thus it appears that the same diversity of opinion prevailed on this head with respect to this disease, as with regard to the yellow fever, which indeed it very nearly resembles, and probably is the same. That which has been denominated the Bulam fever, is also nearly allied†. This seems to be merely the bilious continued, or bilious remittent, of warm climates‡.

It appears by the practice and writings of the most eminent physicians who have witnessed the Gibraltar, and other parts of the Mediterranean, fever, that the leading remedies were blood-letting, and purging by the submuriate of mercury and antimony; for upon opening many bodies after death, the brain as well as the abdominal viscera presented appearances demonstrative of a turgescence of the vessels of the former, and an inflamed state of some of the latter. In many, the stomach contained a dark or black slimy fluid, closely adhering to the internal coat.

Where the disease breaks out in a garrison, the healthy should immediately be separated from the sick, and, if possible, be encamped at a considerable distance. Subjecting the former to cold ablution daily might possibly enable them to resist the powers of contagion the better; for that it is of a highly contagious nature, I am perfectly convinced. In the apartments of the sick, fumigation (as advised under the head of Typhus Gravior) should be adopted. An attention to these, and other precautionary means, may be attended with the most happy effects: a neglect of them, with ruinous calamity and devastation, as was unfortunately experienced at Gibraltar on the first appearance of the disease.

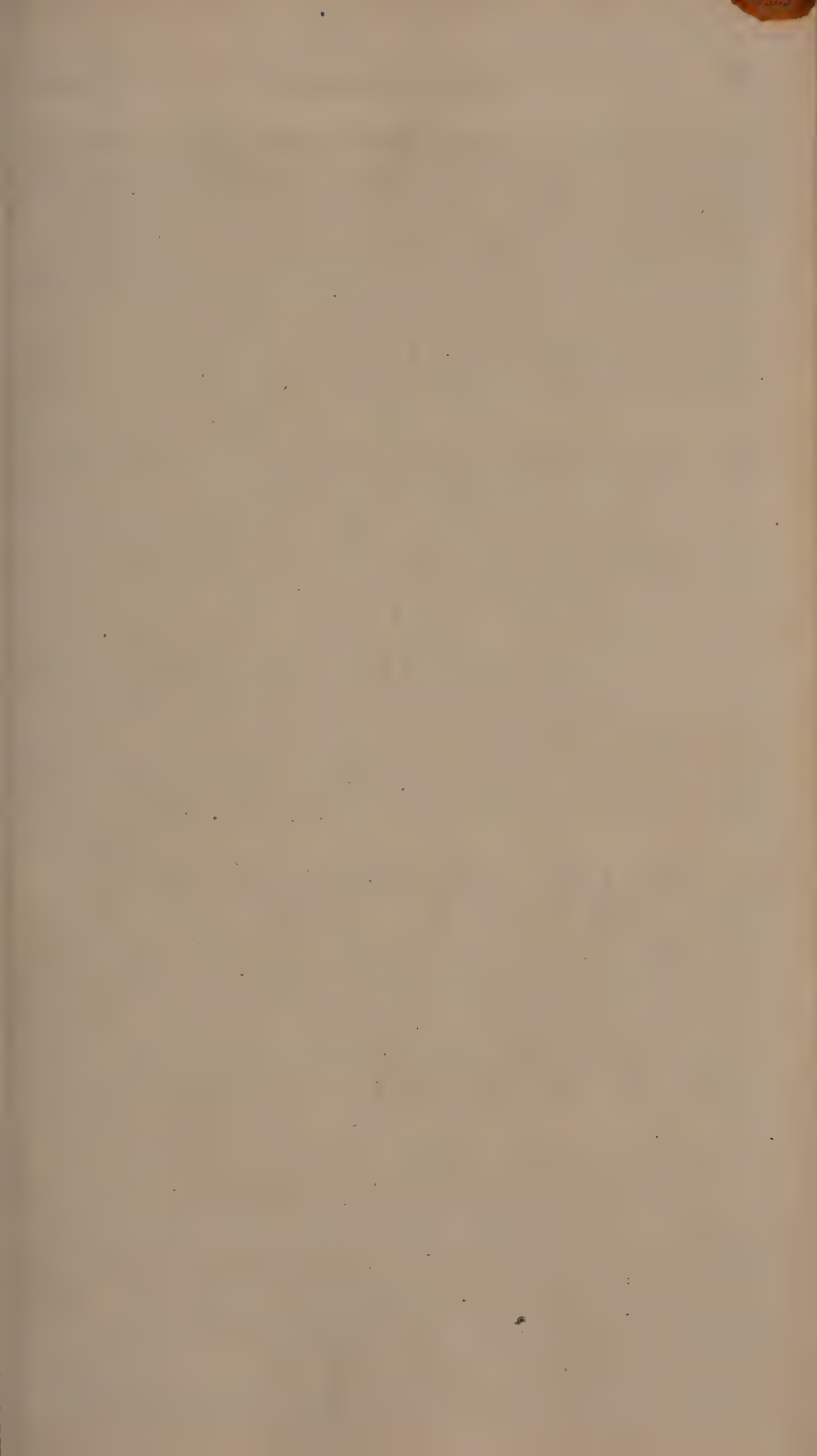
Mr. Jackson, in his account of the empire of Morocco, states it as his opinion, that the epidemic fever which made its appearance at Cadiz, and afterwards spread all along the southern shores of Spain, was really the plague, imported from the Barbary states, and suffering, after its passage to a Christian country, some variation, originating from the different modes of living, and other circumstances.

Having pointed out the most approved method of treating the yellow fever, it seems advisable to offer a few hints, by an attention

* See Reports of the Pestilential Disorder of Andalusia, Cadiz, and Gibraltar, by Sir James Fellowes.

† See Observations upon the Bulam Fever, by Dr. Pym.

‡ See Dr. Bancroft's Sequel to his Essay on Yellow Fever.



to which Europeans may often be enabled to withstand its attack; or, if seized, to go through it with the least danger. The plethoric and robust being the subjects most liable to this malignant disease, all such, on their approach to the warm latitudes, ought to be bled in proportion to their strength; but should this have been neglected during the voyage, it may be done immediately on their arrival on shore. It will easily be understood here, that bleeding, as a preparative, will have a very different effect from what it would have in a curative intention; for in the former, it prevents morbid action, and gives time for assimilation; whereas, in the latter, it may induce debility and morbid associations, very dangerous to life.

After bleeding, if the patient is of a full and plethoric habit, the bowels are to be opened by some cooling purgative; and if he is naturally of a bilious habit, it may be advisable to premise a gentle emetic. Having adopted these steps, he may then begin a slight course of mercury, taking from two to four grains of hydrargyri submurias, according to his age and other circumstances, every other night, either in the form of a pill, or that of a powder, mixed in some thick vehicle, until the gums become somewhat affected. Should the medicine run through the bowels, a grain of opium, or a few drops of tinctura opii, may be added to each dose. When the mouth shews the mercurial action, a dose of some cooling laxative ought to be administered after one or two days' intermission of the medicine. In some constitutions, not easily affected by mercury, it will be necessary to persevere with steadiness, until the system be thoroughly impregnated; for thereon depends the safety of the patient.

On his voyage being completed, and his landing, he must observe the greatest temperance in his diet, and carefully guard against any exposure to the sun in the middle of the day, and to the cool air of the night, until he becomes somewhat habituated to the climate. The effects of temperance, as a prophylactic, are strikingly demonstrated by Dr. Chisholme, who observes, that while the yellow fever raged at the island of Grenada, the utility of this was remarkably illustrated by the almost total exemption of the French inhabitants from the disease, whose mode of living, compared with that of the English, is temperate and regular in an uncommon degree.

Dr. Clarke tells us, that new settlers who could be prevailed upon to undergo a gentle course of mercury, taking a few laxative medicines, afterwards confining themselves to a moderate use of wine, and living chiefly on vegetables and fruits for the first two or three months, may rely almost to a certainty on escaping this fever. The remark is, I think, well founded, excepting that, notwithstanding all these precautions, it may arise from contagion; and in this case its virulence, in all probability, will be greatly diminished.

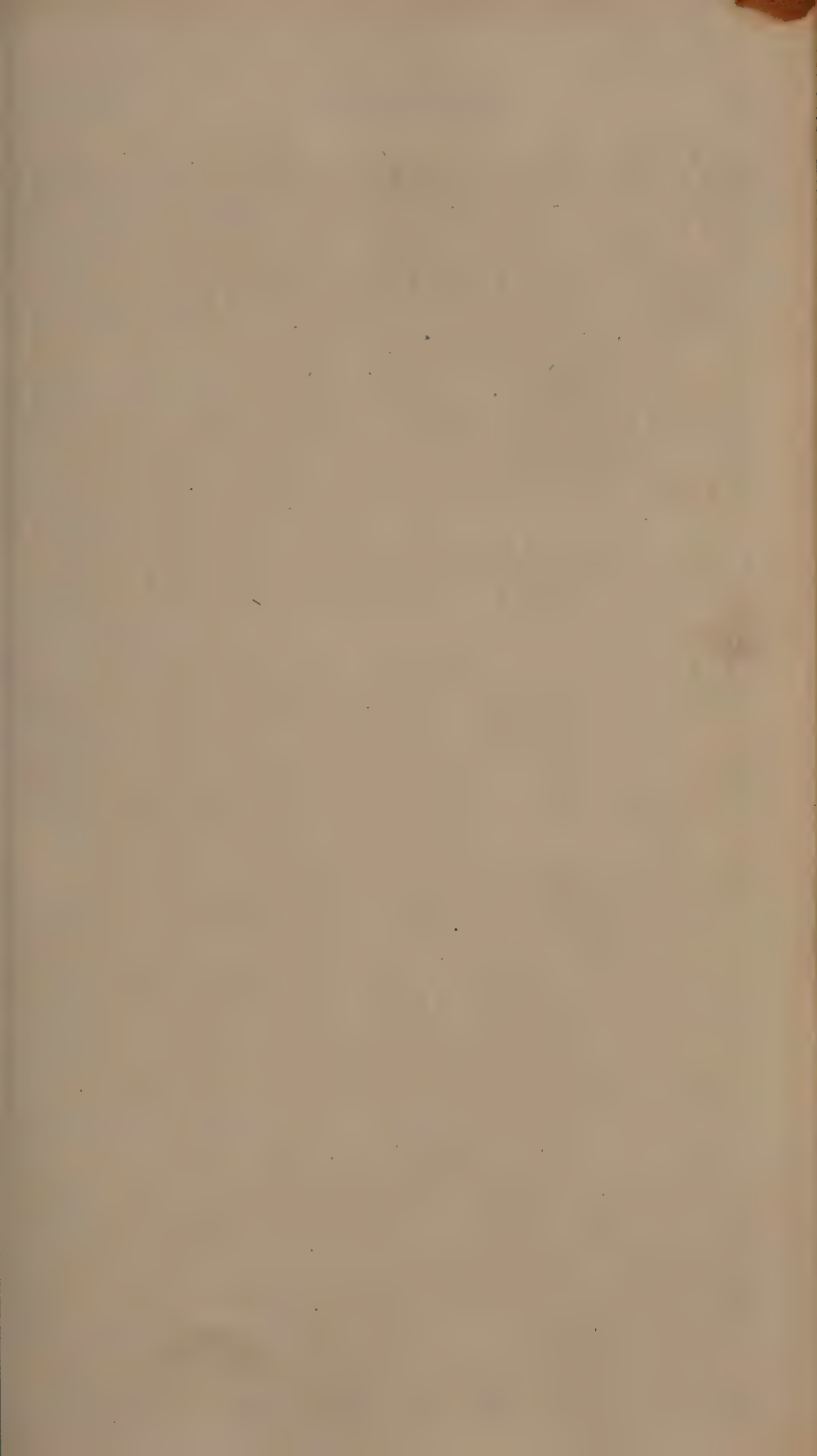
Europeans appear to suffer in point of priority and severity of

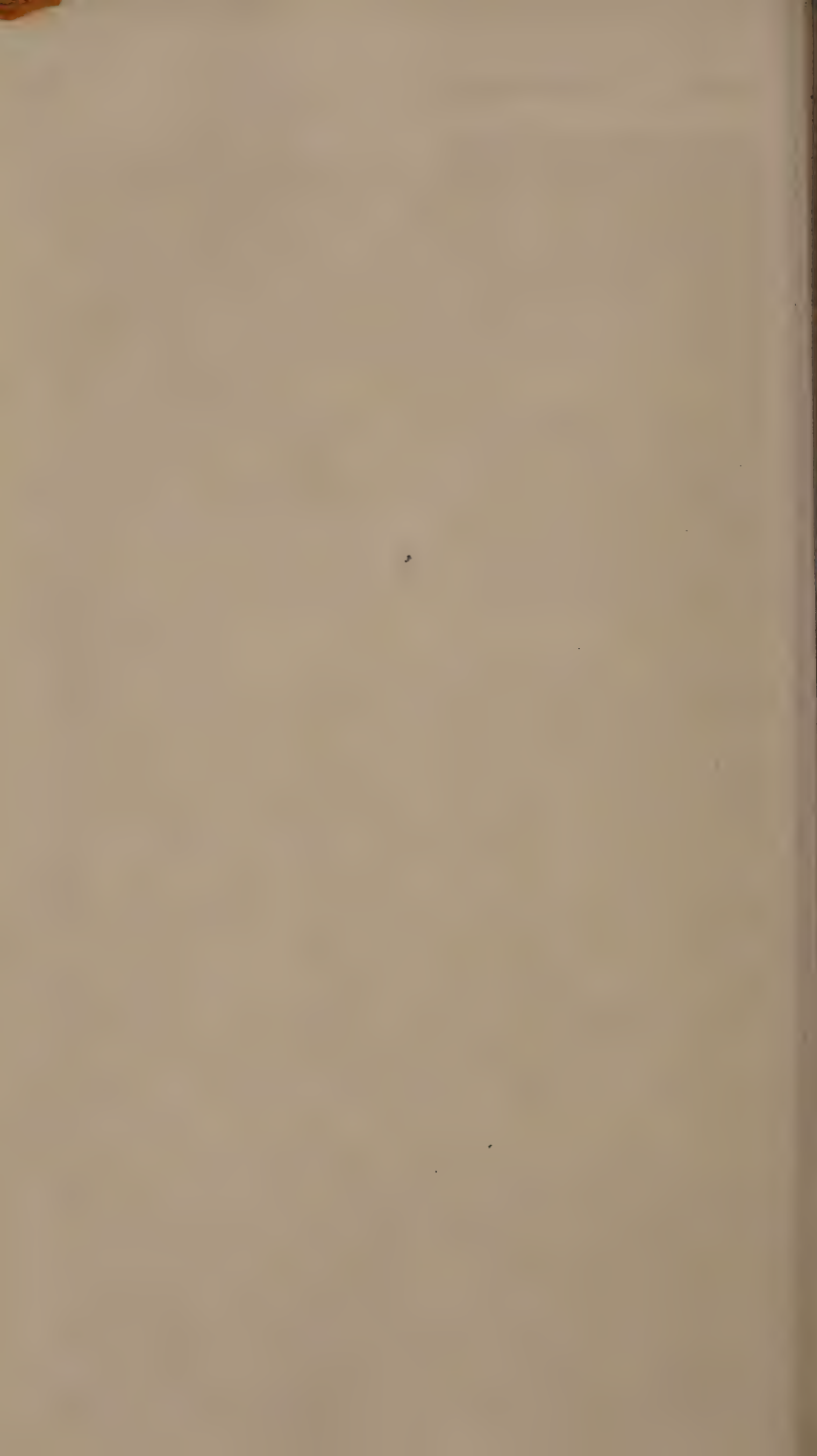
attack by the yellow fever, precisely in the degree that they possess bodily vigour, rigidity of fibre, and are of a sanguineous temperament; and when relaxed by a long residence, or other causes, they become, like the creoles and people of colour (as they are termed), in a great degree exempt from the influence of this fever. It is the reduction of tone, which a certain period of residence occasions in the constitution of Europeans, that secures them in a great measure from the seizure of the yellow fever. It is a corresponding (atonic) state of constitution which affords immunity to the native inhabitant.

Having pointed out the means for enabling Europeans to withstand an attack of this fever, I proceed to offer, from personal experience, a few admonitions or rules, by an assiduous attention to which they probably may be enabled to enjoy a long and uninterrupted state of good health in warm climates, unassailed by any disease whatever. Men who exchange their native for a distant climate, may be considered in a light somewhat analogous to that of plants removed into a foreign soil, where the utmost care and attention are required to inure them to their new situation, and keep them healthy.

Every European, in changing his own climate for a warm one, should, if possible, avoid arriving at his new situation during the rainy season of the year. This, with some small variation, commences in the West Indies about the month of August, and terminates in October. If he has it in his power to choose the place of his residence, he ought to prefer that situation which is somewhat elevated, dry, open to the air and sun, and remote from woods, stagnant waters, or marshy grounds. Most of the towns in the West India islands, as likewise the factories on the coast of Africa, with some of our settlements in the East Indies, are, for the convenience of trade, situated on low grounds, either contiguous to the sea, or on the banks of some large river. Swamps and marshes, therefore, exist in their neighbourhood; and when acted upon by a powerful sun, particularly after heavy rains, they send forth noxious vapours and exhalations, which prove a never-failing source of intermittent and remittent fevers, fluxes, &c., to all descriptions of inhabitants, but more particularly to Europeans lately arrived.

Persons of this description ought, therefore, to pass as little of their time as possible in such a situation; and, where obliged by business to resort there by day, they should retire early in the evening to one that is elevated, and that has the advantages before described. If no such situation is to be procured without great inconvenience, sleeping on board a vessel in an open road or healthy harbour, will then be preferable to passing the night on shore. Where unfavourable circumstances do not admit of either of these advantages, and new-comers are obliged to remain constantly in an unhealthy spot, they will act prudently in adopting such means as will tend in some measure to lessen the danger to





which they are exposed. The highest apartment in the house should be chosen to sleep in; if furnished with a stove, a small fire should be kept in it; and the windows that front the swampy ground, if the house is to the leeward of this, are to be kept shut, admitting the light and air by the others. About half an ounce of the compound tincture of bark may be taken every morning on an empty stomach, repeating the dose again in the evening. Smoking tobacco might also be serviceable in such a situation. A propensity to smoking is, however, too general among Europeans and natives, in tropical climates; yet it ought to be considered not only as a degrading but an injurious habit, as, during the process, the grog glass is in constant circulation. In particular places, where marshy or other deleterious exhalations abound, or during very moist damp weather, at certain seasons of the year it may be useful and allowable.

The diet of Europeans, newly arrived in a warm climate, should consist of a greater proportion of vegetable food than of animal, avoiding such articles of the latter as are either salted or very highly seasoned. To all such, a free use of ripe subacid fruits will be highly proper, as they will not only assuage thirst, but serve to correct any tendency in the fluids to putrefaction. In the West Indies it is usual to take weak punch in the forenoon daily: sherbet, or an infusion of preserved tamarinds, in water, will be found, however, a grateful and more salutary beverage to allay thirst. The danger of drinking cold liquors of any kind when the body is much heated by exercise, and the perspiration profuse, cannot but be obvious to every person.

The unbounded hospitality of the islanders in the West Indies frequently proves a source of much evil and danger to new-comers; for they are no sooner arrived, than they are engaged by invitation in a daily round of visiting and feasting, committing therein excesses, which, together with an unavoidable exposure to the dews of the evening, are not unfrequently productive of a severe attack of illness. To all new settlers I beg leave, therefore, to recommend a very moderate indulgence in the delicacies of the table; a spare and temperate use of all kinds of vinous and spirituous liquors, giving wine the preference to spirits; a proper self-command in sensual gratifications; the carefully avoiding any exposure to a current of air, or moisture, particularly when the body is heated by exercise; their avoiding this in the heat of the day, taking it early in the morning and cool of the evening; their return early to their respective homes so as to avoid the night dews; their refraining from dancing and such other active amusements; and their cautiously obviating a costive habit, by taking from time to time some gentle cooling laxative, until they are able to establish a proper regularity in this point, by visiting the temple of Cloacina at certain hours every day, and soliciting natural evacuations.

The custom of going early to bed, and rising betimes in the morning, is conducive to health every where, but more especially

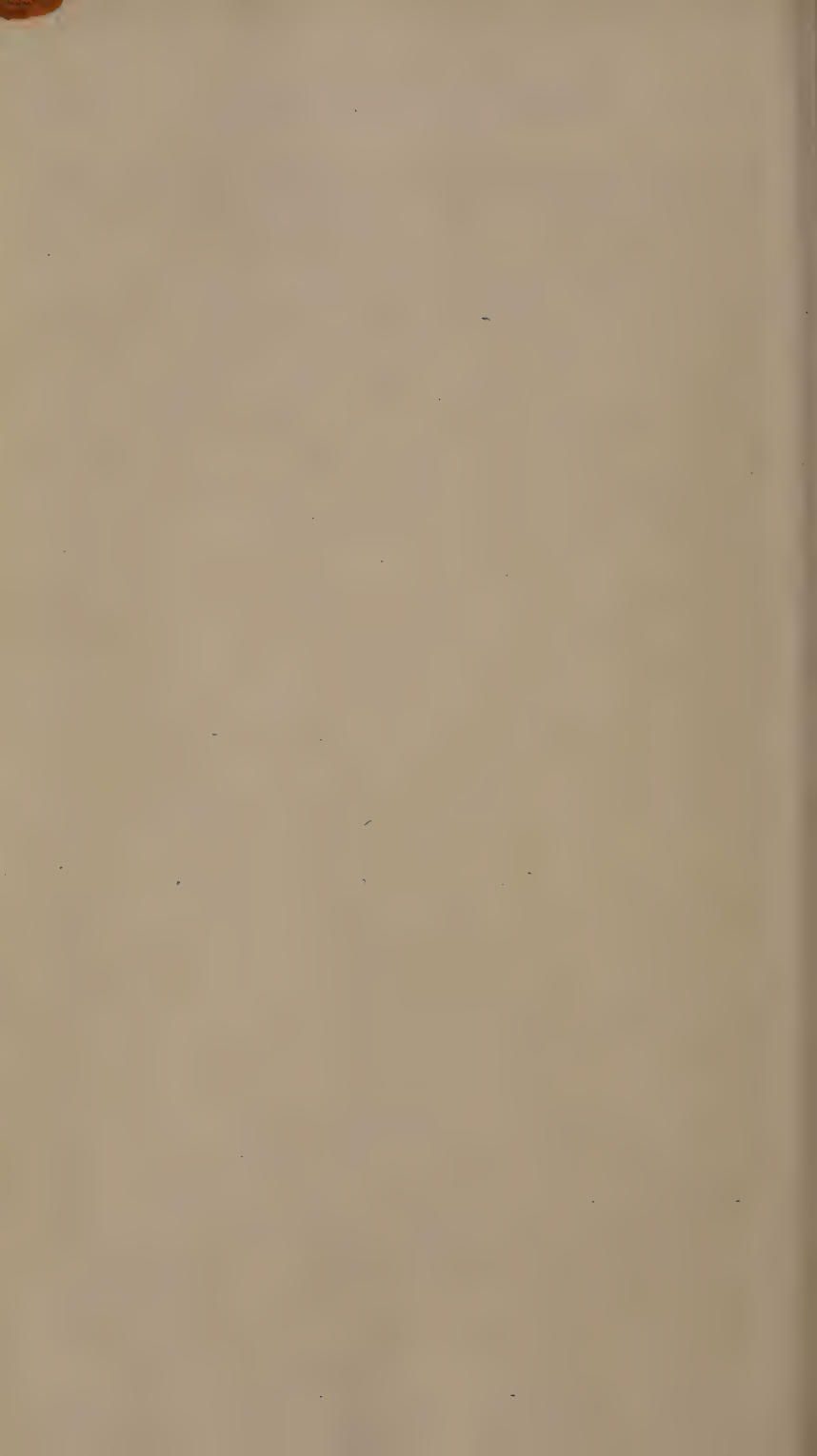
so in hot countries. If gentle exercise, either on foot or horse-back, be added in the morning, it will prove highly salutary ; and should cold bathing be first used, the body would thereby be much invigorated, and rendered less susceptible of external impressions. Where the convenience of a proper bath is not to be procured, water properly cooled, by having been exposed all night to the air in pots, or a tub, may be thrown over the body. Minor ablutions, at other periods in the day, may also have a good effect. Cold bathing is one of the most powerful means we possess for counter-acting the injurious influence of a hot climate, and it connects the most grateful sensations with the most salutary effects, but it should be used in the mornings. The practice would, however, be injurious to those who labour under any visceral derangement : for such, a slight tepid bath may be substituted with advantage.

The dress of new-comers should consist of coats made of thin woollen cloth, with waistcoats and breeches of dimity or nankeen, and they should clothe in proportion to the exposure. What is worn next to the skin should be made of cotton in preference to linen, as this last, when moistened with perspiration in consequence of any severe exercise, is very apt to convey a sense of chilliness when the body becomes inactive again. Calico shirts will, therefore, be preferable to linen ones. Those who are afflicted with rheumatic pains may substitute a waistcoat of thin flannel next to the skin. New settlers should observe the greatest precaution in changing their clothes, of every kind, as soon as possible after getting wet ; a circumstance too frequently made light of and neglected, and which often, therefore, proves the cause of an attack of some severe disease.

In a few words, the preservation of the health of Europeans in tropical climates will very much depend on avoiding the various predisposing and exciting causes of disease, until the physical sensibility of the system is reduced by habit to the climate.

Wherever the nature of military service unfortunately requires troops to be stationed near a marsh or jungle, as sometimes is the case in the West and East Indies, healthier spots should, if possible, be selected, and suitable buildings erected, for the reception of the sick, who should be removed there as soon as the precursory symptoms of disease appear. It sometimes happens, however, that in districts remarkable for insalubrity to a considerable extent, no healthy spot can be found ; but probably even the most unhealthy may be converted into one of comparative salubrity, by the draining of low marshy grounds, and the destruction of jungle.

The rules to be observed for preserving the health of seamen in warm climates, as well as in cold ones, are inserted under the head of Scurvy.



ORDER II.

PHLEGMASIÆ, OR INFLAMMATIONS.

THE character of this order of diseases is synocha fever, with inflammation or topical pain; the function of an internal part being at the same time injured; the blood upon venesection exhibiting a buffy surface.

Before I proceed to speak of the different inflammatory diseases to which the human frame is liable, it seems proper to make a few observations on inflammation in general; as likewise to point out the different species of it which are to be met with in practice, and the constitution most liable to be attacked.

Certain constitutions are much predisposed to inflammatory diseases, such as where there evidently exists an inflammatory diathesis: here there prevails a healthy appearance, the countenance is ruddy, and the muscular fibres firm, the individual being capable of great exertion, and of continuing it for a length of time without intermission. Moreover in this constitution, the powers of the system, however much exhausted by exercise, are quickly renovated by food and rest, even in a moderate quantity, and is further characterized by the equally diffused action which occurs when a stimulus is taken, no one part being more excited than the others. If by any accident local inflammation is induced, it often terminates rapidly in healthy suppuration.

In every inflammation there is an increased action of the blood-vessels, propelling forward a greater quantity of blood than usual into the part affected, by which means its sensibility and irritability are increased, its vessels distended beyond their natural tone, and the circulation of blood through them rendered more rapid.

A variety of opinions have, however, been entertained with respect to the nature of inflammation. Hoffman, and Dr. Cullen, supposed the proximate cause to consist in an increased action of the blood-vessels, with a spasmodic stricture of their extremities; but as the beginning veins are in a state of over-distention in an inflamed part, as well as the arteries, it is evident that no such spasmodic stricture can exist. Dr. M'Bride's hypothesis on the nature of inflammation is, that, besides the action of the blood-vessels being increased, the resistance to the course of the blood is diminished; and a third doctrine has lately been advanced, which teaches, that instead of an increase of action in the vessels of the part, as is commonly supposed, the direct contrary takes place, and that there is a deficiency of action and paralysis of the vessels affected, instead of spasm. The principal argument in favour of this hypothesis is drawn by its founder, Mr. Latta*, from the

* See his System of Surgery.

swelling of the inflamed part, which he attributes to a partial stagnation of blood; but the great heat of the part, the throbbing pain, and, in many cases, the accelerated action of the whole sanguiferous system, clearly point out an increase of action in the vessels.

When the inflammation is confined to one particular part, without producing any general affection in the system, it is called local or topical; but when it produces effects on the whole system, it is known by the name of general inflammation.

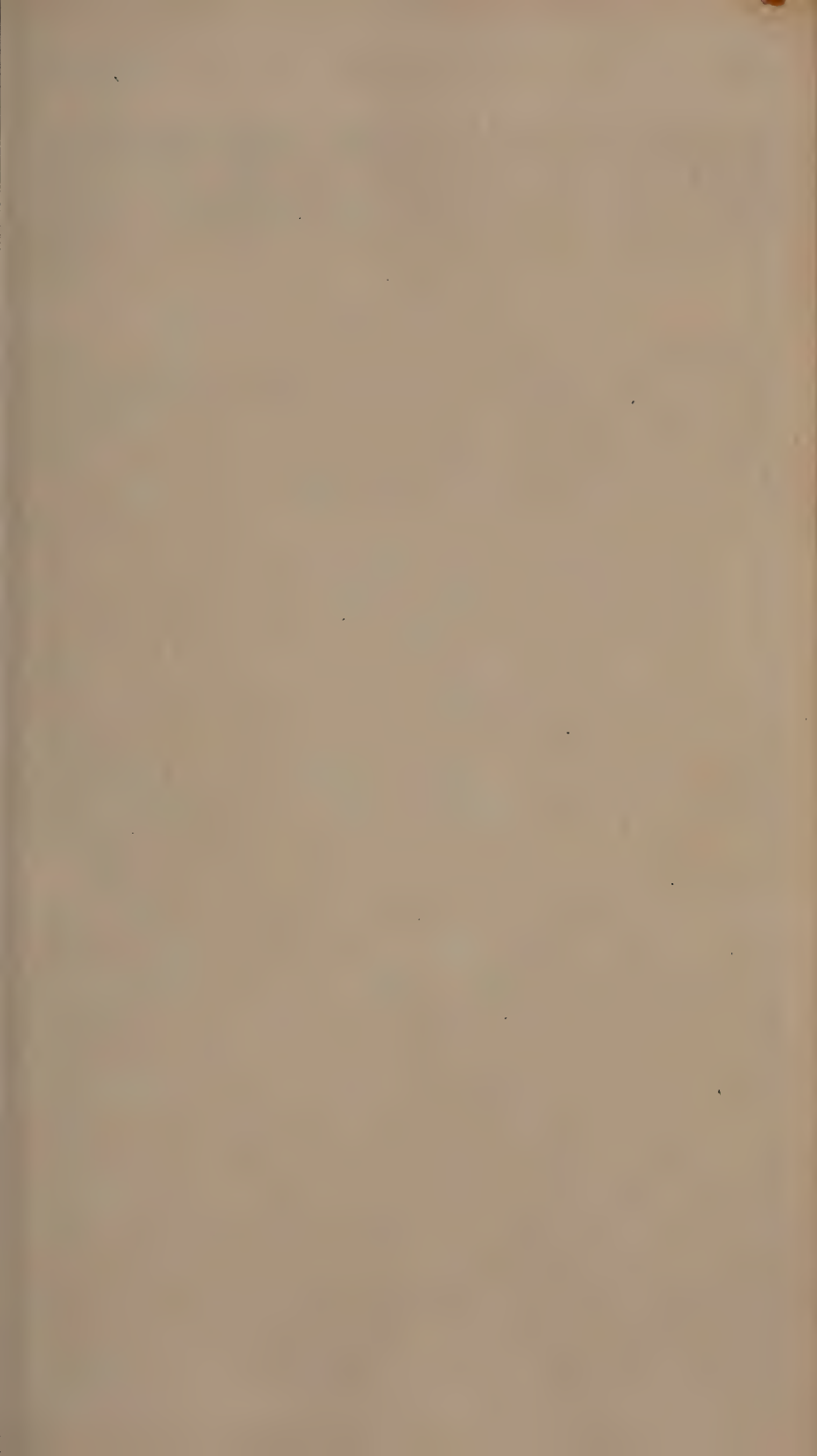
Inflammation is properly of two kinds; viz. the phlegmonous and erysipelatous. By the phlegmonous is to be understood an inflammatory circumscribed affection of the skin and cellular membrane, with a swelling rather prominent in the centre, and of a bright red colour, attended with pain and distention, and in which any effusion that happens to take place is usually converted into pus. By the erysipelatous is implied an inflammatory affection confined principally to the skin when seated outwardly, and to the mucous membrane when internally, with hardly any evident swelling, being of a mixed red colour, readily disappearing upon pressure, but quickly returning again, the redness being of no regular circumscription, but spreading unequally, with a pain like to that of burning, which gives rise to a number of small blisters, and terminating usually in a desquamation of the scarf-skin, and now and then in gangrene, but never in a suppuration, unless combined with phlegmon. Such a combination does frequently occur in practice, constituting what has been denominated erysipelas phlegmonodes.

Besides the differences in the circumstances of these two kinds of inflammation, there is another very evident one, which is, that a phlegmon, when considerable, is generally accompanied with more or less of the symptoms of general inflammation; whereas, erysipelas is usually attended with symptoms of irritation when perfectly pure; from which circumstance it will be necessary to adopt a different mode of treatment in each of them.

Of the erysipelas there are two cases: one, when it is merely an affection of the skin alone, with very little of the whole system, which is called erythema; the other, when it is an affection of the system, and this is named erysipelas.

Persons in the prime of life, and in full health and vigour, and of a plethoric habit of body, are most liable to the attacks of phlegmonous inflammation: whereas those advanced in years, and those of a weak, irritable, and spare habit, are most apt to be attacked with erysipelatous or erythematic inflammation.

The more moderate the different symptoms are, the better is the chance of the inflammation terminating by resolution. When it does not readily yield to proper remedies, and is unusually obstinate, or deep-seated, there is reason to believe that it will terminate by suppuration. When the symptoms are very violent, especially if the inflammation is of the erythematic kind, there will be reason to fear gangrene.



Resolution is always a favourable termination : suppuration is also favourable if the inflammation be external and the habit good ; but in internal inflammations we shall find it is generally to be dreaded. Internal gangrene is always fatal. It is only when the gangrene is external that medicine can avail, and then it often fails.

PHLEGMON.

THIS species of inflammation is occasioned by the application of stimulants, such as fire or burning ; by external injuries, either bruising, wounding, over-stretching, or compressing the parts ; by extraneous substances which have lodged, and either by their form, bulk, or quality, produce irritation ; by the application of cold ; and by any thing that determines an increased impetus of blood to the part.

The chief seat of phlegmonous inflammation is the inner surface of the true skin and the cellular substance contiguous to it, from which it extends to the adjoining parts of the cellular membrane and skin ; so that the surface soon assumes a florid colour, the tumour, at the same time, extending both in depth and circumference. It comes on with an itching, dryness, redness, and increased heat and circulation in the affected part ; which symptoms are shortly succeeded by a circumscribed tumour, through which shooting and throbbing pains extend. If the inflammation runs high, and is of considerable extent, then an increased action of the heart and arteries takes place ; the pulse becomes full, hard, and quick ; the skin dry and hot ; great thirst arises, and a feverish disposition ensues.

Phlegmonous inflammation usually terminates either by resolution, suppuration, effusion and adhesion, or gangrene. By resolution we are to understand the natural cure or going off of the inflammation by a gradual cessation of all the symptoms, the state and texture of the part remaining entire. By suppuration is implied the conversion into matter, or pus, of the serum, or coagulable lymph and blood which have been effused in the adjoining cellular substance, in consequence of which a cavity, termed an abscess, is formed. When effusion takes place without terminating in suppuration, the matter exuded is frequently viscid, and unites the neighbouring parts together often in twenty-four or thirty hours. In some cases this takes place from a slow degree of inflammation, such as is not noticed at the time : hence, on opening bodies, adhesions between the pleura and lungs, or among the abdominal viscera, are often found. By gangrene is meant a mortification not yet actually formed, but approaching, being the intermediate state between the height of inflammation and sphacelus. Sphacelation implies the total loss of life in the part, an absolute derangement of its structure, the abolition of all its functions, and an utter incapacity of its being restored to any service

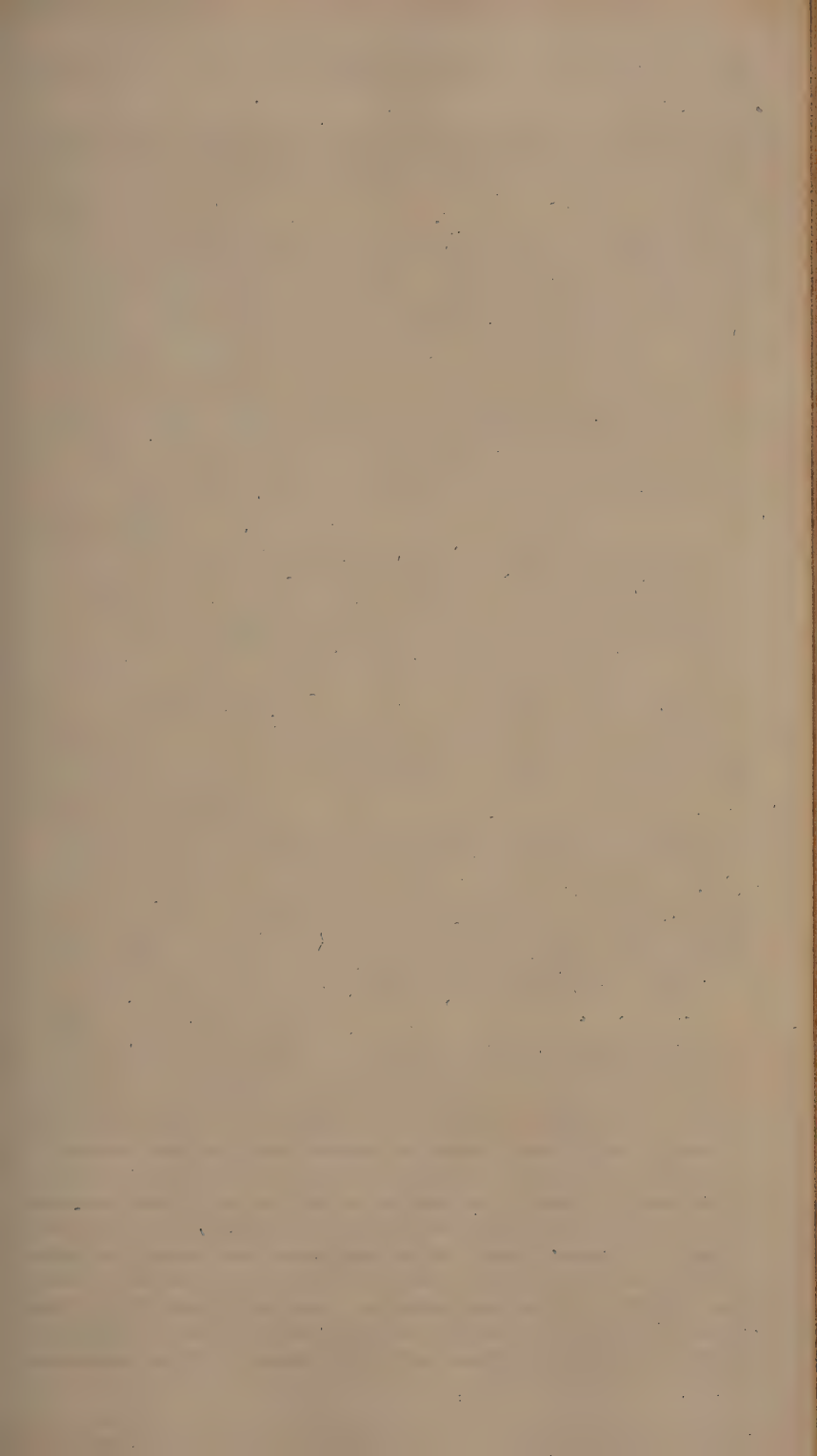
in the animal economy. Many of the phenomena of gangrene seem to depend on a great violence in the action of the vessels, followed by a relaxation, or loss of tone in them; this, in many cases, being so complete, that the action cannot be restored, which occasions the part to become perfectly dead, or sphacelated.

Such are the most common terminations of this species of inflammation; but in the schools a fourth has been noticed, which is in a scirrhus, implying an indolent, knotty hardness of the part, unattended by any discoloration, but accompanied with lancinating pains, the tumour after a time ulcerating and becoming cancerous. This termination of inflammation is, however, confined to glandular parts.

When the patient is seized with reiterated shiverings; when the fever and inflammatory appearance cease quickly without any perceptible reason; when a heavy, cold, and dull uneasiness is experienced in the part affected, instead of acute pain; when the most elevated portion of the tumour appears soft and white, while the rest has its redness increased; and when, at the same time, the surgeon can feel the fluctuation of a fluid, we may be assured that a termination in suppuration has ensued. The latter symptom, however, occurs only where the matter lies superficially: but a man endued with great nicety of touch may be able, in many cases, to perceive the undulations of matter, even when deeply lodged. In most instances, indeed, of this nature, the quick subsidence of all the inflammatory symptoms, the repeated rigors, and the sense of weight and coldness in the part, are the only obvious appearances; but the patient being afterwards attacked with emaciation, nocturnal sweats, and other hectic signs, very clearly point out that there is a hidden collection of matter.

The symptoms which denote the termination of inflammation in incipient mortification are; first, a sudden diminution of the pain and sympathetic fever: secondly, a livid discoloration of the part, and which, from being yellowish, becomes of a green hue: thirdly, a detachment of the cuticle, under which a turbid fluid is effused: and fourthly, the swelling, tension, and hardness subsiding, while, at the same time, a crepitus is perceived on touching the part, owing to a generation of air in the cellular membrane. The term gangrene has been applied to the disease in this stage; but when the part has become black and fibrous, and destitute of natural heat, sensation, and motion, it is denominated sphacelus.

In phlegmon, our prognostic should be drawn from the symptoms which are present, as well as from the seat of the inflammation. If the inflammatory appearances cease suddenly, and blisters discharging a thin ichorous matter arise, together with the part affected losing its sensibility and becoming of a livid colour, then a gangrene will certainly ensue. On the contrary, a gradual abatement of the inflammatory symptoms by a termination, either in resolution, or a suppuration where proper pus is



formed, may be regarded as prognosticating a favourable event. This remark holds good, however, only with respect to external suppurations, as internal ones are always dangerous, and not unfrequently fatal.

In the incipient state of a phlegmon, it will always be proper to attempt the cure by procuring a resolution of the tumour, if possible; and, therefore, an early attention should be paid to the removal of the cause which has excited it, as likewise to obviate the phlogistic diathesis, either of the whole system, or of the particular part which is affected.

If the inflammation has proceeded from a lodgement of some extraneous body, such as a bullet discharged from any kind of fire-arms, or has been occasioned by a thorn or splinter of wood, &c., it ought immediately to be removed, and, if necessary, the wound must be dilated to such a size as to admit of its being readily got at.

In cases of local inflammation, the phlogistic diathesis may be obviated by drawing a proper quantity of blood immediately from the neighbourhood of the part affected, either by scarifications with the aid of cupping-glasses, or by the application of several leeches, which will be the preferable way if they can be procured; promoting the flow of blood by linen cloths dipped in warm water, and renewing them as soon as they cool: but in internal inflammations, it will be advisable to draw blood from the system by opening a vein or artery, taking care to proportion the quantity drawn off to the age and strength of the patient, as well as to the severity of the symptoms.

With a view of obviating the phlogistic diathesis, we may likewise have recourse to purgative medicines. In inflammations of any of the external parts of the body, as likewise in those of the head and chest, a frequent use of purgatives will be attended with a good effect; but in a similar affection of the bowels, active purgatives should be administered with due caution. Those of a mild nature, together with emollient laxative clysters, deserve a preference.—See Enteritis.

To assist these means, and terminate the inflammation by resolution, if possible, it will be right to make use of some discutient application, as remedies of this nature are, in some mild cases, of themselves sufficient to disperse an incipient phlegmon. In cases of violent contusion or fracture, where a considerable degree of tension prevails, a poultice of rye-meal, or crumbs of bread, moistened with the liquor plumbi subacetatis, properly diluted with water (*viz.* about eighty drops of the former to about a pint of the latter), will be a very proper application; and this may be renewed twice or thrice a day, until the swelling and inflammation subside: but in a common phlegmon, or where the part is so tender and painful as not to be able to bear the weight of a poultice, we must be content to apply pieces of soft linen moistened in some sedative

application*. It is to be understood, however, that these remedies are to be applied cold, whether we use poultices or wet pledgets, and that they are to be renewed as often as they become stiff, hard, or warm.

The application of cold is indeed one of the most powerful means which we possess for abstracting heat and subduing inflammation; and it has been carried so far in some instances, that pounded ice and snow have been employed for the purpose. When these are not to be obtained, we may substitute, as a refrigerant, pieces of soft linen moistened in a solution of the nitrate of potass and muriated ammonia in water, or even in simple cold water; but they are to be renewed frequently.

In some cases of phlegmonous inflammation, particularly that which attends compound fractures, swelled testicle, &c., the pain is often so violent as to deprive the patient of his natural rest. When this happens, we may give opiates both with advantage and safety, provided sufficient evacuations have been premised, and that we afterwards obviate the costiveness produced by them with gentle aperients. The dose, however, should be considerable; otherwise opium, instead of proving serviceable, will have a contrary effect. About fifty or sixty drops of tinctura opii may be given to an adult an hour or two before bedtime, and in a like proportion to those of a younger age. Children at the breast may take a small quantity of the syrup. papaveris, instead of the tinct. opii.

When the inflammatory symptoms run so high as to affect the system, it is not unusual for a febrile disposition to prevail. In such cases we may order some febrifuge medicine to be taken every three or four hours, combined with the nitrate of potass†.

If, notwithstanding these means, the tumor should shew an evident tendency to suppurate, we are then to accelerate its progress by the application of warm emollient cataplasms, which ought to be renewed three or four times a day. If linseed can be procured, a poultice made of this, slightly bruised and boiled

- * 1. R Liquor. Ammon. Acetatis,
Aquæ Distillat.
Alcohol. aa f. ℥ij. M.

Vel,

2. R Ammon. Muriat. ℥j.

Acid. Acetic. Dilut. f. ℥ij.
Spirit. Camphoræ, f. ℥j.
Liquor. Plumbi Subacetat. ℥ xvj. M.

ft. Lotio.

- † 3. R Potassæ Nitrat. ℥ss.—℥j.

Aq. Fervent. ℥vij.
Antimon. Tartarizat. gr. ij.
Syr. Violæ, ℥ij. M.

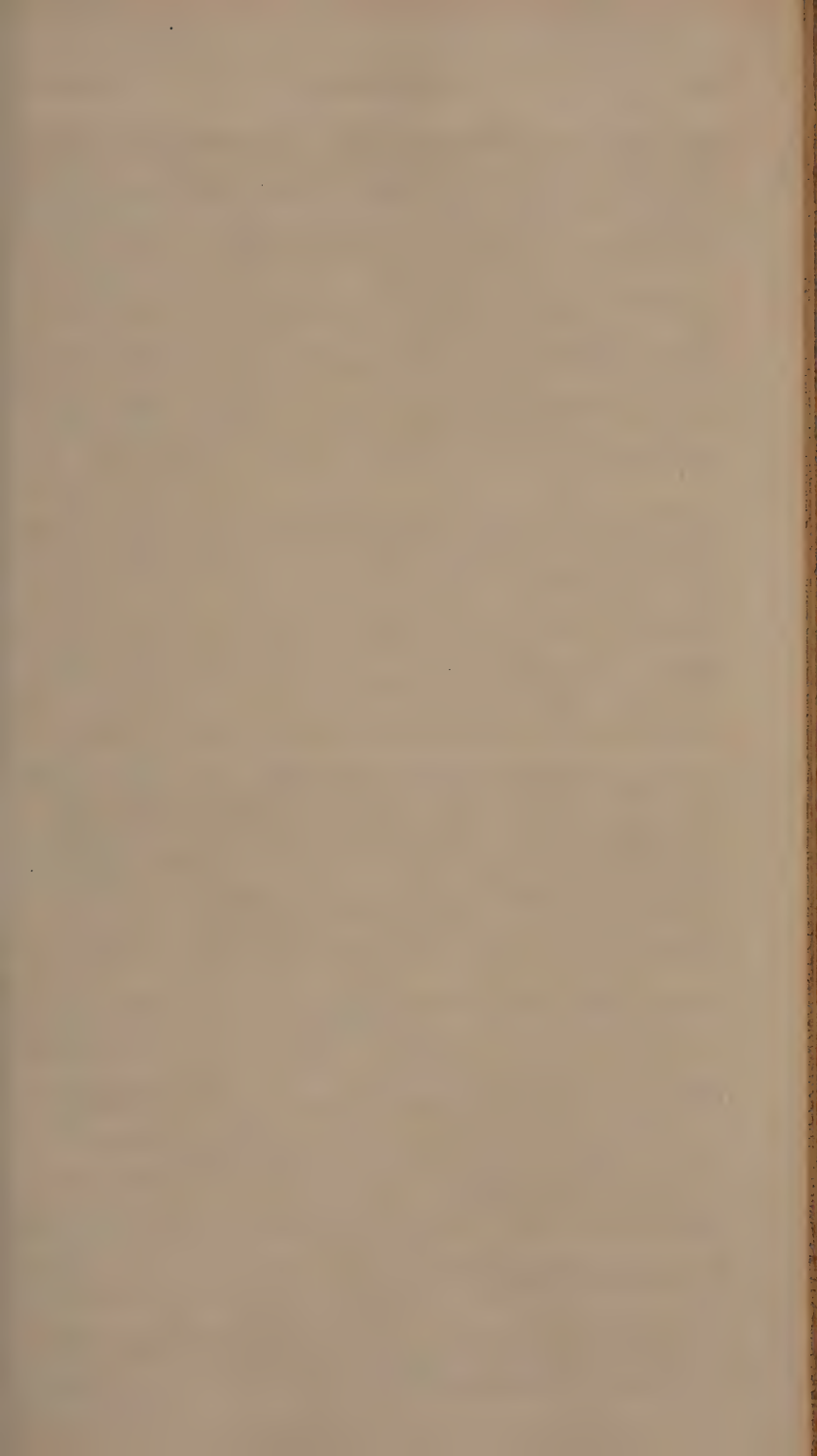
- * 1. Take Solution of Acetate of Ammonia,
Distilled Water,
Rectified Spirit, each two ounces.
Mix them, and use them as a wash.

Or,

2. Take Muriate of Ammonia, one
drachm.
Distilled Vinegar, two ounces.
Camphorated Spirit, one ounce.
Solution of Subacetate of Lead,
twenty-four drops.

Mix them for a wash.

- † 3. Take Nitrate of Potass, from half a
drachm to one drachm.
Hot Water, eight ounces.
Tartarized Antimony, two grains.
Syrup of Violets, two drachms.



Psoas and Lumbar Abscesses.

are generally found in young people and arise from a general debility or bad state of health, and from diseases of the spine which begin between the ligaments and surface of the intervertebral substance. The matter spreads till it reaches the origin of the psoas muscle, which passes into adhesion and forms a bag, surrounded by a complete ring.

The abscess proceeds as far as the tendon of the muscle, by Pott's ligament between the femoral vein and the symphysis pubis, and has the appearance of femoral hernia. It is distinguished from hernia by the patient having bad pains in the loins and difficulty in extending the thigh, for some time previously to its appearance.

When the abscess forms on the side of the vertebra, instead of the fore part it is called lumbar abscess.

Counter irritants and issues are recommended, but only a little can be done till the abscess is of considerable magnitude; and when it is a red hot flash of the spine it may then be opened by making a valuable opening into the abscess so as to discharge the matter and close the wound directly.

No danger does not arise from the quantity of matter accumulated by from the irritation produced by the attempts to cure the abscess, and fill the cavity by the

up with milk and water, will be preferable, on account of its emollient quality; but when it is not to be obtained, the white bread poultice, with a small addition of oil, may be used: previous, however, to the application of the poultice, the part affected should be well fomented with flannels wrung out of a warm decoction or infusion of emollient herbs*.

In inflammatory tumors, which are slow in suppurating, stimulating poultices, composed of onion, garlic, galbanum, or ceratum resinæ, mixed with the white of an egg, and the common poultice, may possibly forward the suppuration. Warm plasters of galbanum, or pix abietina, applied to slow suppurating tumors, sometimes prove useful; and they have this advantage over poultices, that they do not prevent people from doing their ordinary business.

When the suppuration is completed, and the tumor is become very soft to the touch, and is near the surface, it is to be opened, either with a lancet or a trocar, in the part which is most dependent, taking care to press the matter perfectly out; after which the wound is to be dressed with dry lint, and a pledget spread with the ceratum resinæ to be laid over all. If the wound does not heal readily, the cinchona, with other tonics, should be used till the patient is restored to health. To support the vis vitæ, a full diet, with a moderate allowance of wine, will be requisite.

In very large abscesses, particularly in that of the psoas muscle, it has been found a judicious practice to evacuate the matter by means of a seton, or by a flat trocar in a canula; which is to be insinuated between the skin and cellular membrane for some space, and then to be plunged in a slanting direction down into the abscess, leaving the canula, and withdrawing the trocar. The orifice in the skin, and deep-seated parts, by this means will not be in a direct line, and the severe constitutional symptoms which are apt to arise from the exposure of an extensive

ft. Mistura, cujus sumat cochl. magna ij.
pro dos.

Vel,

4. R Haust. Salin. ℥jss.

Potassæ Nitræ. gr. x. — xv.

Vini Antimon. Tart. ℥xij.

Syrup. Simpl. ℥j. M.

ft. Haustus. Stia quaque hora sumendus.

* 5. R Flor. Anthemidis,
Fol. Althææ, āā ℥ij.

Papav. Somnif. Exsiccæ. ℥ij.

Aq. Ferventis, Oiv. M.

ft. Fomentum.

Mix them, and take two table-spoonsful for a dose.

Or,

4. Take Saline Draught, one ounce and a half.

Nitrate of Potass, ten or fifteen grains.

Wine of Tartarized Antimony, eighteen drops.

Common Syrup, one drachm.

Mix them as a draught, to be taken every three hours.

* 5. Take Camomile Flowers,

Marshmallow Leaves, each two ounces.

Poppy Heads, bruised, an ounce.

Boiling Water, two quarts.

Infuse them for a proper time, then pour off the liquor, and use it for fomentation.

cavity to the air, are thereby avoided. In the like cases it will also be proper to direct the patient to take at least an ounce of cinchona bark a day, in order to promote the production of proper pus; and to support his strength under the discharge, a nutritive diet, with a moderate use of wine, should be allowed.

Good pus is of the consistence of cream, and of much the same colour; it has no smell, scarcely any taste, and six parts in seven appear to be water, but it is in general rather heavier than water. In the common heat of the atmosphere it does not unite with this liquid, but does so when exposed to heat. It contains in it some volatile matter, the peculiar properties of which have not been fully explained; when examined by the microscope, it commonly appears to be flaky. Pus, when examined chemically, has the same general properties as the blood.

The matter of an abscess is either absorbed or discharged, but more generally the latter; and in either case, if it is well conditioned, the cavity is gradually filled up by an operation of nature, which is termed granulation, from the new parts appearing in the form of small red grains. When this process goes on favourably, the granulations are of a florid red colour, and proceed in a regular manner till the cavity is accurately filled, its edges (if the matter of the abscess has been discharged externally) being even, or nearly so, with the sound skin.

When the granulation is too languid, it may be forwarded by the same means which promote a favourable secretion of pus. It is, however, sometimes too luxuriant, forming irregular masses, which project beyond the lips of the wound. In such cases, it will be necessary to check the granulating process, and destroy the projecting parts by escharotics; but for more particular information on this head, I must refer to the works on surgery.

It has been customary to treat inflammation, terminating in suppuration, in the manner just detailed; but in the treatment of such abscesses, it has lately been recommended * to approximate the lips of the wound, immediately after the contents of the sac are discharged, by strips of adhesive plaster, then applying a compress, and securing the whole by a roller of sufficient length, applied somewhat tight. The dressings are, at the same time, to be kept constantly moistened with a cold saturnine lotion. By proceeding thus, instead of in the usual way, the external air (if it really be productive of the evil commonly attributed to it) is effectually excluded; adhesion, and obliteration of the sac, will certainly be obtained; the health of the patient will in no wise be injured either by the quantity or quality of the subsequent discharge, as the cutis vera approximates closely; when the cure is effected, there is no waste of cutaneous sub-

* See Mr. Cunningham's communication in vol. v. p. 272 of the *Medico-Chirurgical Journal*.

Psoas and Lumbar Abscesses.

process of adhesion. A few days after the opening of it, violent symptoms of constitutional irritation are apt to come on, great depression of strength, loss of appetite, and the patient is reduced to the lowest extremity. The sides of the abscess must be brought as near together as possible by a bandage round the abdomen &c. The general health must be particularly attended to. Hydrating the abscess with solutions of alum or sulphate is recommended as promoting adhesion and lessening the quantity of purulent matter.

stance, which frequently renders the parts weaker afterwards than they were before; there will be no unseemly or puckered cicatrices, so often observed on the scite of large abscesses; and, finally, instead of the curative process occupying weeks, nay months sometimes, by this plan of treatment the cure is nearly effected in a few days; for when the cavity of the abscess is once obliterated by the adhesion of the investing integuments to the surface below, the cure may be considered as next to being completed, as the lesion then constitutes merely a simple wound.

Should phlegmonous inflammation threaten to terminate in gangrene, or already have shewn symptoms denoting such a termination, we are then to stop the progress of the mischief, and promote the speedy separation of the dead parts from the living. To effect this, it was formerly customary to make slight scarifications, and afterwards to apply warm antiseptic fomentations, and poultices: but modern practitioners, particularly Mr. Bell and the late Mr. John Hunter, have highly disapproved of this mode of proceeding, and recommend a reliance to be placed on a liberal use of the bark of cinchona, together with a nutritive diet, and such a quantity of wine as will be sufficient to keep up the pulse, and induce the necessary degree of inflammation. To give energy to the system, to restore vitality to the affected parts, and to lessen the morbid irritability in them, are the objects which we should keep in view in all cases of gangrene.

In cases of gangrene, arising from external injury, and exposing the life of the patient to danger, Mons. Larry* strongly advises that amputation should be performed, without waiting the appearance of the line of separation between the living and dead parts.

Where gangrene arises from debility, opium frequently proves useful: and as it by no means counteracts the effects of the cinchona bark, it may be given along with it: indeed opium will prove generally beneficial, and particularly in that variety of the complaint in which no previous inflammation existed, but which is accompanied by violent pain.

The efficacy of the bark of cinchona is in every instance indeed much increased by its junction with opium in these affections, and therefore they cannot be too early employed in the curative plan of treatment, conjoined together.

In cases of gangrene, accompanied with convulsive spasms, or arising from any local injury, such as a fracture, &c., producing irritation, a combination of musk with ammonia has been found by Mr. White, of Manchester, and other practitioners on his recommendation, to have been attended with a happy effect in

* See his *Mémoires de Chirurgie Militaire*.

abating subsultus tendinum, stopping the progress of mortification, and occasioning the dead parts to separate from the living. A bolus, consisting of ten grains of musk, and the same quantity of ammonia, repeated every three hours, is what is advised on such occasions.

Musk, combined with the volatile salt of amber, might probably prove a still more powerful remedy for checking the progress of gangrene arising from any local injury producing irritation.

By modern practitioners we are instructed to keep the parts cool, and that all applications to them ought to be cold instead of warm, as was formerly practised. As an application to parts in a gangrenous state, there can be none better than a poultice made by stirring into an infusion of malt (such as may be readily obtained from the ale or porter brewers) as much oatmeal as is required to make it of a proper thickness, and afterwards adding about a spoonful of yeast*. In applying it, due care must be taken not to bind it on too closely, as the fermentation, a short time after its application, will be considerable, and its bulk of course so increased, as to put the cloths and bandages which confine it very much on the stretch.

The cataplasma carbonis (which is prepared by mixing two ounces of wood charcoal, reduced to a very fine powder, with half a pound of the common farinaceous poultice) is another application which has lately been much used in gangrenous cases, as well as in sweetening fetid ulcers, and disposing them to granulate favourably.

By some communications through the medium of the Medical and Physical Journal†, we are given to understand that the progress of mortification has been checked, and the offensive stench issuing from the wound entirely removed in a very short space of time, by sprinkling the diseased parts thickly over with the nitrate of potass, pulverized very fine. In the instances alluded to, the dressing was renewed twice or thrice a day.

When the diseased parts separate and slough off, dry lint is to be laid on the wound with a pledget, spread with some digestive ointment, applied over all.

In the second volume of the Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, is inserted a paper from Dr. Harness, at that time a physician to the Fleet, on the good effects of the application of the gastric fluid of graminivorous animals to parts in a gangrenous state. By this gentleman we are informed, that he found its application to succeed, in more than a hundred cases of sphacelus, in entirely removing the sloughs, and occasioning healthy granulations.

As a gentle stimulus to parts in a state of gangrene, where any is thought proper, and in preference to warm gums, balsams, or

* This is the Cataplasma Effervescens of the Pharmacopœia Chirurgica, being similar to the Cataplasma Fermenti of the last London Pharmacopœia.

† See vol. xi. p. 206.

rectified spirit, Mr. B. Bell advises * the use of a weak solution of ammonia muriata in vinegar and water. We are informed by him that a drachm of the salt, to two ounces of vinegar and six of water, form a mixture of a proper strength for every purpose of this kind; but the degree of stimulus can be easily either increased or diminished, by using a larger or smaller proportion of the salt.

In similar affections of the toes and feet, Mr. Pott † very much disapproves of all stimulating applications, and in their stead recommends soothing and emollient ones, and this with a view to avoid exciting pain. A case which some time ago came under my inspection has, in my opinion, decidedly established the superiority of the latter mode of treatment over the former. On meeting in consultation the professional gentlemen who had the management of it, I strongly urged the necessity of soothing and emollient applications (the good effects of which I had before witnessed on other similar occasions); and these were adopted for a time with the greatest relief to the sufferings of the patient, as likewise arresting the progress of the mortification. Not happening to call again for three or four days, this prudential mode of proceeding was discontinued by the chief surgeon, and a stimulant one was substituted; to which plan, as a disciple of the old school, he was strongly bigotted.

The consequences were, that the pains, which had before been much alleviated, became highly aggravated; and the mortification, which had been arrested in its progress, spread so considerably as to threaten the greatest danger. Being now thoroughly convinced of his error, he was glad once more to have recourse to the soothing and emollient plan; by a strict pursuance of which, by administering opium to the amount of six or eight grains a day, so as to keep up a constant effect; by allowing a liberal use of wine; and by giving the cinchona bark in substance, in the quantity of about an ounce a day, joined with camphor (which combination seems to possess strong antiseptic powers), the patient appeared for many weeks to have a great chance of recovering. The prospect, however, proved delusive; for he soon afterwards paid the debt of nature. From his having been withdrawn from under my care during the last six weeks, I cannot speak as to the mode of treatment which was latterly pursued.

It seems almost superfluous to observe, that it was found necessary to obviate the effect of the opium on the intestines by a frequent use of some mild laxative or emollient clyster, so as to procure one or two evacuations daily. In the early stage of the disease the cataplasma effervescens was employed, and seemingly with a most happy effect.

In this species of mortification, Mr. Potts reports, he found the cinchona bark had little or no influence, but that opium in large

* See his *System of Surgery*, vol. i. p. 112.

† See his *Chirurgical Works*, pp. 799 and 800.

doses, frequently repeated, proved an effectual remedy in many cases. To give the patient every possible chance of recovering, it will be best, I think, to administer both.

It sometimes happens, particularly in military hospitals, when the wards are much crowded, and the air contaminated to a high degree with putrid miasma, that sudden and rapid mortification is apt to attack all the wounded who are lodged in such wards, and that several individuals die, notwithstanding the application of the curative means and treatment successfully resorted to in the other species of gangrene. The term hospital gangrene has, therefore, been applied to this species of the disease.

It seldom falls under the observation of practitioners in civil life; it occurs most commonly amongst the wounded after an engagement, particularly when many are crowded together. When it supervenes upon a wound, its progress to a fatal termination is rapid, and all structures suffer from it.

By an examination of its symptoms, it would appear that this gangrene is the effect of a general state of the system, which produces a local affection on wounds or ulcers; an affection which, after having passed through different stages or periods, degenerates into mortification or gangrene, assuming all the symptoms of slow fever, and terminating very frequently by destroying the life of the patient.

In most cases there is reason to suppose the contagion is spread through the atmosphere, and that the miasma, most probably, are applied immediately to the wound or ulcer; but there are some grounds, at the same time, for believing that hospital gangrene may also be produced by the inspiration of the deleterious matter. All who have described the disease, say, that it is communicable by the pus of ulcers which are affected with it, and particularly by whatever may be impregnated by this pus, such as lint, linen, mattresses, sheets, blankets, &c.; and it has been thought by some of the German and French surgeons, as well as a few of the English ones, that the usual washing and bleaching of linen is not sufficient to annihilate the power of the contagious matter, as lint made from the old sheets of hospitals wherein this species of gangrene had existed, was found to give rise to the disease among those labouring under recent wounds or ulcers in other establishments wholly free from it.

During the late war this malady very frequently made its appearance in the French hospitals; and in the treatment of it, we are informed by Mr. Cross*, that no reliance whatever was placed by the surgeons upon internal remedies, although acknowledged to be a constitutional and contagious affection. He states, that the topical application of vegetable and diluted mineral acids was found by them to prove successful in mild cases, and in a few instances carbon; but that the actual cautery alone proved capable of

* See his *Sketches of the Medical Schools of Paris*.

arresting the fatal progress of the more unfavourable. The iron is applied red hot by the French surgeons, so as to produce an eschar on every point of the surface of the sore.

We are informed by Mr. Blackadder* that he experienced the progress of the disease to be completely arrested by keeping the sores constantly wet with the liquor arsenicalis diluted with an equal quantity of water, by means of lint dipped therein; and with suitable topical applications the wounds soon got well without paying any attention to the constitutional affection, which quickly disappeared of itself. To detach the slough, he says, it must be dressed with a detergent ointment, and be frequently washed with a solution of potass. On the detachment of this, the wound becomes a simple ulcer, and is to be treated accordingly. No instance occurred in the practice of this gentleman during the time he was resident officer of a division hospital in Spain, in which this method of cure failed of success, when timely and properly employed. It appears also, that it was afterwards adopted in the hospitals of Belgium with the same results. Mr. Blackadder mentions, that the prejudices of the times are against the use of the actual cautery.

In all cases of hospital gangrene, the strictest attention should be paid to cleanliness, and a free and perfect ventilation. The wounded patients, and those labouring under common ulcers, should be kept apart, and the wards of the hospital containing such patients be made to undergo frequent fumigations, as advised under the head of typhus. Cinchona, in conjunction with the mineral acids, may be considered as appropriate medicines.

Carbuncle (Anthrax) is an inflammatory tumor which seldom suppurates perfectly, but discharges a thin acrid humour, as is usual in erysipelatous inflammation, and exhibits symptoms of approaching sphacelus. A generous diet, with a liberal use of wine and bark, in combination with snake root, together with opiates to alleviate pain and procure rest, will be the best internal remedies in this complaint; warm fomentations with bruised poppy heads, with an addition of a little rectified spirit, and a cataplasm of bark and yeast over the whole tumor, (which ought to be renewed every four hours,) are the best external applications we can employ.

The termination of inflammation in a scirrhus is (as was before observed) confined to glands. Upon a gland becoming scirrhus, we should disperse it, if possible; and if we cannot effect this, then we should endeavour to keep it stationary, and prevent its ulcerating and degenerating into a cancer. The means best calculated to answer these intentions are pointed out under the particular heads of Scirrhus and Cancer.

If the tumor, on a fair trial of these means, should not disperse, but, on the contrary, shew an evident tendency to ulcerate, and degenerate into a cancer, then, in my opinion, the sooner it is ex-

* See his Observations on Phagedæna Gangrænosa.

tirpated, the better will it be for the patient; as it is more than probable that the affection is not originally connected with the system, but is merely local, and that the constitution or habit does not become tainted until ulceration takes place.

ERYSIPELAS.

THIS disease is an inflammatory affection, accompanied usually with drowsiness, often however with delirium, when the face is affected, and with a fever of a few days' continuance.

When the inflammation is principally confined to the skin, and is unattended by any affection of the system, it is called Erythema; but when the system is affected, it is named Erysipelas*.

It sometimes happens that the inflammation extends to the cellular membrane beneath the skin, whence a real phlegmon and collection of matter become joined to the erysipelas, which combination has been denominated erysipelas phlegmonodes; but this is mostly the case where there has been a previous scratch or injury of the skin.

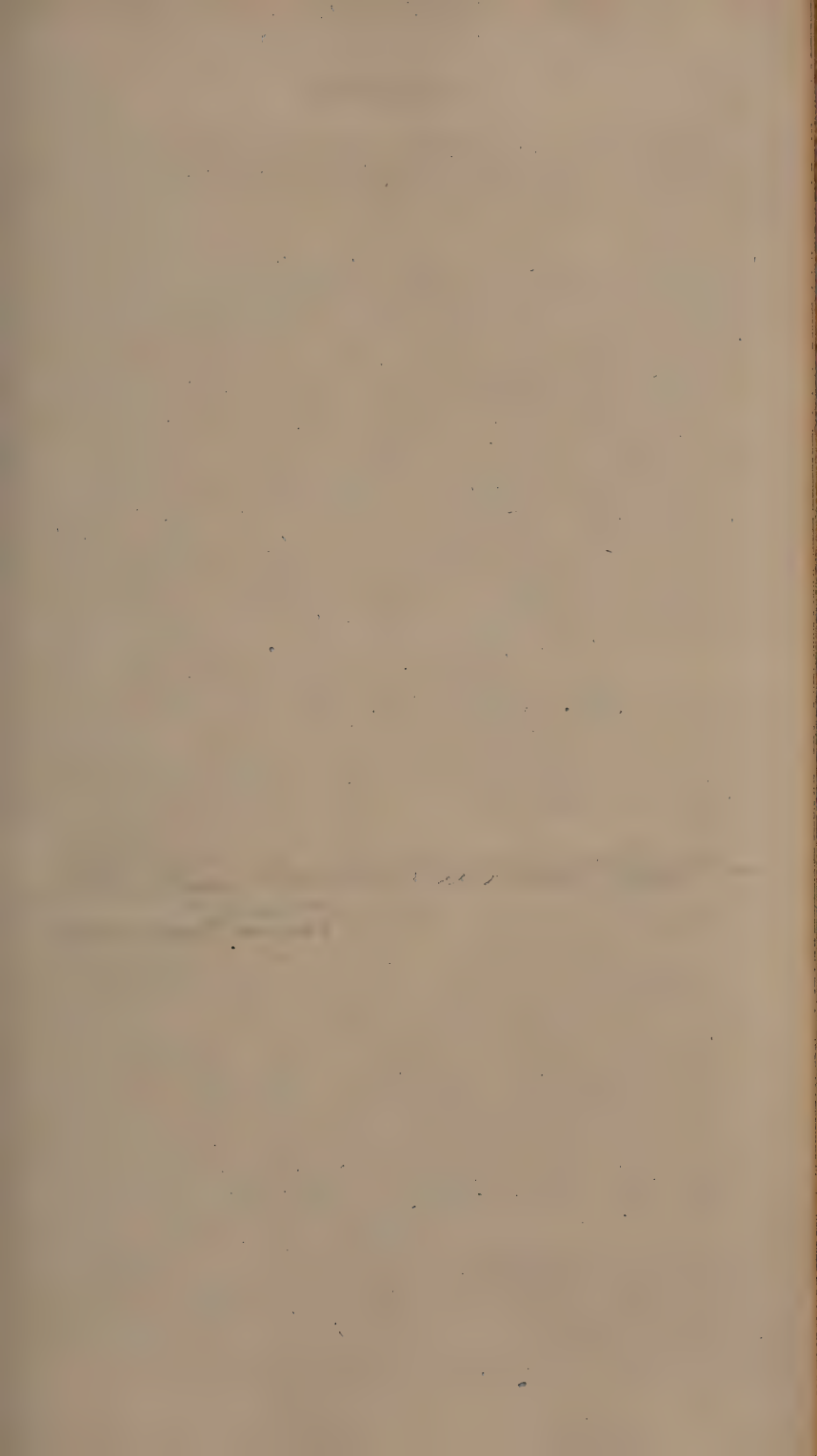
Every part of the body is equally liable to erysipelatous inflammation, but it more frequently appears on the face, legs, and feet, than any where else, when seated externally; and it occurs oftener in warm climates than phlegmonous inflammation.

Erysipelas does not often attack persons before the age of puberty: it is a disease of advanced life, met with more frequently among women than men, particularly those of a sanguine irritable habit. In many people there seems to exist a predisposition to the disease. Sometimes it returns periodically, attacking patients once or twice in the year, and in some instances much oftener, greatly exhausting the strength thereby.

It is brought on by the several causes that are apt to excite inflammation; such as injuries of all kinds, the external application of stimulant acrid matters to the skin, exposure to cold, particularly during a course of mercury; obstructed perspiration, suppressed evacuations, or other causes inducing plethora; the presence of irritating matter in the primæ viæ, &c.; and it may likewise be occasioned perhaps by a certain matter generated within the body, and thrown out on its surface. A particular state of the atmosphere seems sometimes to render it epidemical, as we often find the scarlatina anginosa, which is a species of internal erysipelas, prevail as such.

It seems connected likewise with that peculiar state of the atmosphere which occurs in hospitals and crowded ships of war, occasioning the slightest wound to produce erythema. By the generality of practitioners, erysipelas has not been considered as

* In Dr. Cullen's nosological arrangement of diseases, erysipelas is placed among the Exanthemata; but I have thought it best not to separate it from Erythema, that the two species may thereby be seen at one view.



a contagious disease; but some cases have occurred in my practice which induce me to think that it is occasionally so, and there are some recorded in a periodical work*, which confirm the supposition.

In slight cases, where it attacks the extremities, it makes its appearance with a roughness, heat, pain, and redness of the skin, which becomes pale when the finger is pressed upon it, and again returns to its former colour when it is removed. There prevails likewise a small febrile disposition, and the patient is rather hot and thirsty. If the attack be mild, these symptoms will continue only for a few days, the surface of the part affected will become yellow, the cuticle or scarf-skin will fall off in scales, and no further inconvenience will perhaps be experienced; but if the attack has been severe, and the inflammatory symptoms have run high, then there will ensue pains in the head and back, great heat, thirst, and restlessness; the part affected will slightly swell; the pulse will become small and frequent; and about the fourth day a number of little vesicles, containing a limpid and in some cases a yellowish fluid, will arise. In some instances the fluid is viscid, and instead of running out, as generally happens when the blister is broken, it adheres to and dries upon the skin.

In unfavourable cases these blisters sometimes degenerate into obstinate ulcers, which now and then become gangrenous. This, however, does not happen frequently; for although it is not uncommon for the surface of the skin, and the blistered places, to appear livid or even blackish, yet this usually disappears with the other symptoms of the complaint.

The period at which the vesicles shew themselves is very uncertain. The same may be said of the duration of the eruption. In mild cases it often disappears gradually, or is carried off by spontaneous sweating. In some cases it continues without shewing any disposition to decline for twelve or fourteen days, or longer.

The trunk of the body is sometimes attacked with erysipelatous inflammation, but less frequently so than the extremities. It is not uncommon, however, for infants to be attacked in this manner a few days after birth; and in these it makes its appearance about the genitals. The inflamed skin is hard, and apparently very painful to the touch. The belly often becomes uniformly tense, and sphacelated spots sometimes are to be observed. From dissections made by Dr. Underwood, it appears, that in this form of the disease the inflammation frequently spreads to the abdominal viscera.—See Infantile Erysipelas.

Another species of erysipelatous inflammation, which most usually attacks the trunk of the body, is that vulgarly known by the name of shingles, being a corruption of the French word *ceingle*, which implies a belt. Instead of appearing a uniform

* See Medico-Chirurgical Journal, vol. i. p. 615.

inflamed surface, it consists of a number of small pustules, extending round the body a little above the umbilicus, which have vesicles formed on them in a short time. Little or no danger attends this species of erysipelas.

When erysipelas attacks the face, it comes on with chilliness, succeeded by heat, restlessness, thirst, and other febrile symptoms, with a drowsiness or tendency to coma or delirium, and the pulse is very frequent and full. At the end of two or three days a fiery redness appears on some part of the face, and this at length extends to the scalp, and then gradually down the neck, leaving a tumefaction in every part the redness has occupied. The whole face at length becomes turgid, and the eyelids are so much swelled as to deprive the patient of sight. When the redness and swelling have continued for some time, blisters of different sizes, containing a thin colourless acrid liquor, arise on different parts of the face; the skin puts on a livid appearance in the blistered places; but in those not affected with blisters, the cuticle, towards the close of the disease, falls off in scales.

No remission of the fever takes place on the appearance of the inflammation in the face; but, on the contrary, it is increased as the latter extends, and both will continue probably for the space of eight or ten days. In the course of the inflammation, the disposition to coma and delirium is sometimes so increased, as to destroy the patient between the seventh and eleventh days of the disease. When the complaint is mild, and not marked by a fatal event, the inflammation and fever generally cease gradually without any evident crisis.

If the disease arises in a gross habit of body, occupies a part possessed of great sensibility, is accompanied with much inflammation, fever, and delirium, and these occur at an early period, we may suppose the patient is exposed to imminent danger. The fever assuming the typhoid form; the inflammation becoming of a purple colour; its suddenly receding from the surface, and attacking an internal part; livid vesications; great prostration of strength; and a weak, rapid, irregular pulse, are to be viewed in a very unfavourable light. Erysipelas never terminates in suppuration, unless combined with a considerable degree of phlegmonous inflammation, which is however sometimes the case; but in a gross habit, the vesications are apt to sphacelate, in which case there will also be great danger. When the febrile symptoms are mild and unaccompanied by delirium or coma, are not combined with typhus, and the inflammation does not run high, we need not be apprehensive of danger.

Where the disease has occupied the face, and proves fatal, inflammation of the brain and its consequences are to be met with in dissection.

Great diversity of opinion has prevailed among the practitioners in medicine, concerning the mode of treatment to be adopted in

erysipelas; some pursuing the same antiphlogistic plan advised in phlegmonous inflammation; others, again, disapproving of all evacuations, and treating it as a disease dependent on irritability.

To reconcile these jarring opinions, I shall consider the complaint as sometimes combined with phlegmonous inflammation (constituting what has been denominated erysipelas phlegmonodes), as now and then happens, when it arises in a full plethoric habit. In such a case, if the skin is hot and dry, the pulse full, strong, hard, and frequent, and the head affected with severe pain, stupor, or delirium, it will undoubtedly be proper to have recourse to bleeding, cooling purgatives, diaphoretic and refrigerant medicines, and the strict observance of an antiphlogistic regimen, as recommended in phlegmon. Topical bleeding, however, by means of leeches, which proves so useful in other varieties of inflammation, is not admissible in erysipelas; as the orifices by which it is drawn are very apt to become gangrenous, or to degenerate into those troublesome ulcers which the disease, when it terminates in effusion, sometimes produces. When we have occasion, therefore, to draw off blood, in order to counteract the inflammatory diathesis, we must do it by opening a vein; and where the head is the part diseased, the jugular will be the most proper. As to the quantity to be taken away, we are to be regulated in this by the violence of the inflammatory symptoms, the appearance of the blood when allowed to cool, and the strength of the patient. From the excessive vascular action which the brain and the affected parts exhibit when the disease proves fatal by occupying the head, there can be no doubt, in such cases, of the propriety of the depleting plan: blood may be taken freely from the arm, and a constant evaporation from the inflamed parts be kept up by means of alcohol and water. In vigorous habits, the efficacy of this practice must be obvious; but in old or infirm constitutions, or where the disease is perfectly pure or local, does not affect the head, is unaccompanied with symptoms of general inflammation, and has arisen in a weak irritable habit, or is accompanied with a fever of the typhoid kind, bleeding will be improper.

The same observation will likewise apply to the making use of strong purgatives; but although I disapprove of such medicines in the latter instance, still it will be right to keep the body open by gentle saline aperients, so as to procure one or two motions daily. Where the inflammation is of a phlegmonous nature, and the head is much affected, a liberal use of active purgatives will undoubtedly be advisable.

In those cases where the fever and inflammation run high, diaphoretic medicines will be proper, and they may be given conjoined with the nitrate of potass, as advised in phlegmon, or as directed under the head of Inflammatory Fever. As erysipe-

latous fevers often terminate by sweat, mild diaphoretics*, with plentiful dilution, become a necessary part of the treatment, and should never be neglected.

In those cases where the head and face are affected, and coma prevails, the semicupium, together with sinapisms applied to the feet, will be highly advisable. The application of a blister between the shoulders may assist in affording relief towards the close of the disease.

It has been observed, that when the disease has made some progress, vesicles of various sizes usually arise. The most proper application will be some dry mealy powder, such as starch, wheat-flour, oatmeal, or chalk; but oatmeal may perhaps be preferable to the rest on account of its not being likely to cake and become hard by the humour which weeps from the parts affected. Probably external applications that reduce the heat of the skin might be employed with advantage.

Some prejudices have indeed long existed against the use of cold applications in erysipelas. Cooling lotions have nevertheless been employed in this disease with great advantage†. I have myself frequently recommended linen cloths wetted with a cooling lotion of equal parts of the liquor ammon. acetatis, or of muriated ammonia dissolved in water, with the addition of a little vinegar and camphorated spirit, in erysipelatous inflammation, with much benefit and relief to the feelings of the patient, when the application of farinaceous powders has seemed indeed rather to aggravate than sooth his sufferings. No solution, either of lead, copper, or alum, should be employed, as these would be injurious.

When effusion is found to have occurred in any considerable quantity, it ought to be discharged by making a small opening in the most dependent part. It has been usual to employ emollient fomentations and poultices in this state of the complaint, in order to bring on a proper suppuration; but the effusion which sometimes happens in erysipelas not being of a nature to be converted into pus, as in the case of a pure phlegmon, they certainly cannot prove serviceable. The ceratum plumbi compositum, or ceratum plumbi acetatis, will be the best application.

Erysipelas phlegmonodes is a species of inflammation which,

† See Cooper's Dictionary of Practical Surgery, and also his First Lines of the Practice of Surgery.

* 1. R Misturæ Camphoræ, f. ʒj.

Liquor. Ammon. Acet. f. ʒiij.

Vini Antimon. Tartarizat. ℥ xij.

Syrup. Simpl. f. ʒj. M.

ft. Haustus, quartis horis adhibendus.

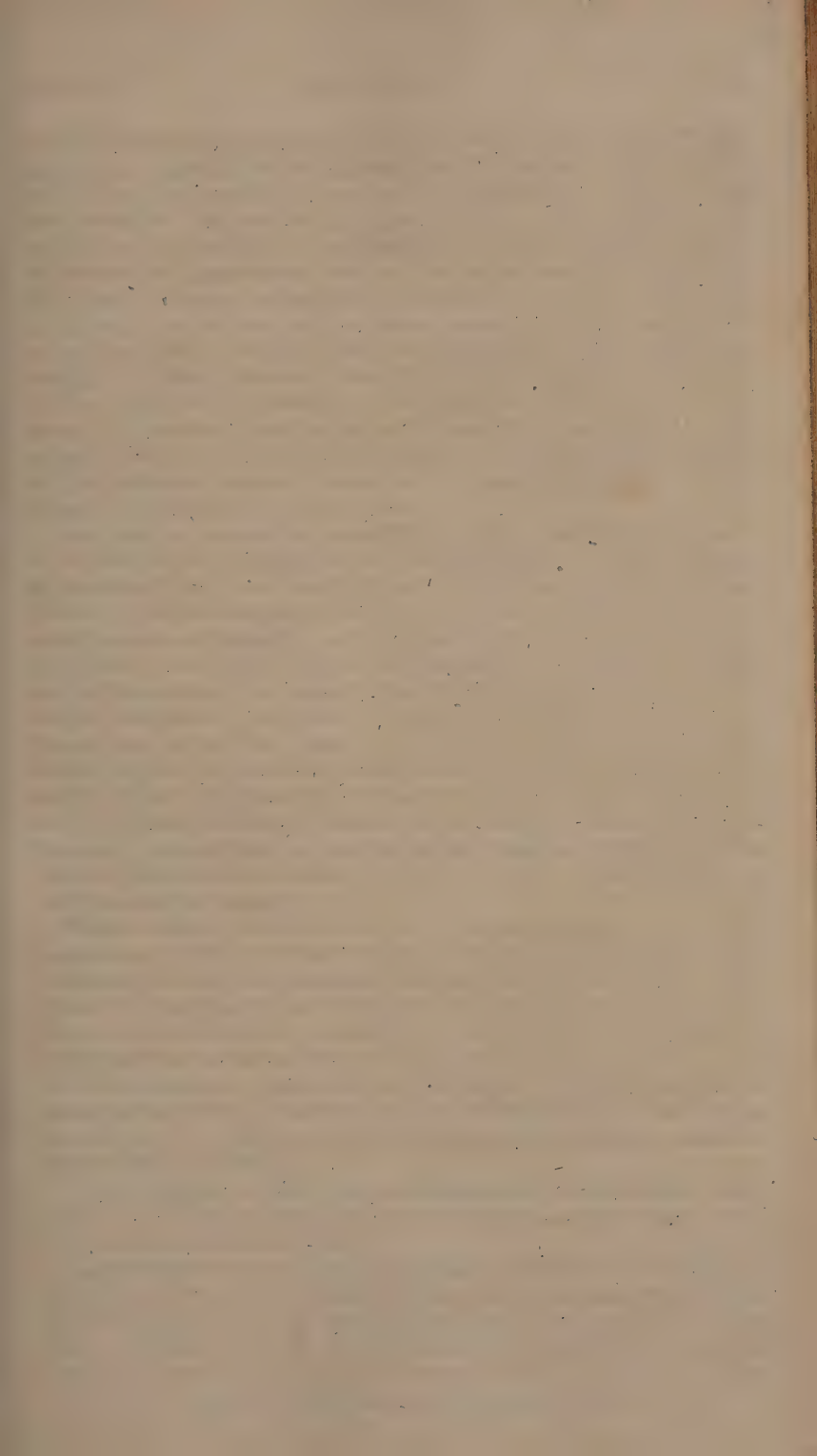
* 1. Take Camphorated Mixture, one ounce.

Solution of Acetate of Ammonia, three drachms.

Wine of Tartarized Antimony, eighteen drops.

Syrup, one drachm.

Make them into a draught, to be taken every four hours.



we are informed by a late writer *, is very prevalent in the British navy, and ascribed by him chiefly to the nature of the diet of sailors, and the sudden alterations of temperature to which they are exposed. Its active influence is found more especially directed to the reticular or condensed cellular substance, forming the muscular aponeurosis, although it often primarily affects the skin, and is thence communicated to that membrane. When pus is formed, it more frequently appears beneath the aponeurosis, in contact with the muscles, and generally destroys that membrane rapidly. It has, however, been found occasionally to commence in the periosteum, detaching that membrane and insulating the bone. A peculiarity in the plan of treatment, recommended by the surgeon alluded to, consists in making free incisions with a scalpel on the inflamed surface, down to the muscles, previous to any secretion of pus having taken place.

Such are the means to be employed when erysipelas happens to be combined with phlegmonous inflammation. When it arises in advanced life, or a weak delicate habit, assumes the typhoid character, and is accompanied with symptoms of irritation, such as depression of strength, a quick small pulse, &c., to take off the irritability, and guard against a termination in gangrene, which sometimes ensues, we should give the bark of cinchona, mineral acids, snake-root, camphor, aromatic confection, and wine. In those cases where the disease is confined to the trunk and extremities, and where there is considerable pain and irritation, the employment of opium seems advisable: indeed, I have used it on such occasions seemingly with much advantage. In erysipelas of the face, even without coma or delirium, from the tendency of this form of the disease to affect the brain, opium is to be regarded as a more doubtful remedy.

Where a tendency to mortification becomes apparent, the above medicines, with wine and other antiseptics, will be the more necessary.—(See Phlegmonous Inflammation terminating in Gangrene.) Ammonia joined with aromatic confection may be given internally, with some probability of advantage, in all cases of erysipelatous inflammation of the extremities or other parts, which threaten to terminate in gangrene. When erysipelas is accompanied with a tendency to the worst kind of hæmorrhage, from being of a malignant nature, alum and the sulphuric acid are particularly indicated.

If the disease is mild, and unaccompanied with febrile symptoms, it will be sufficient to keep the patient within doors, without confining him to his bed.

In those cases where the inflammatory symptoms run high, the diet should consist of light nourishing things, such as preparations of barley, sago, tapioca, rice, Indian arrow-root, panado, and the like; and his drink should be lemonade, tamarind-beverage, or

* See Surgical Observations by Mr. Copeland Hutcheson.

barley-water acidulated with some vegetable acid; but in those cases where symptoms of irritation prevail, a more generous diet, such as animal broths, and a moderate use of wine, ought to be allowed.

For the treatment of the erysipelas with which infants are liable to be attacked, see the diseases peculiar to them at the end of this work.

PHRENITIS, OR INFLAMMATION OF THE BRAIN AND ITS MEMBRANES.

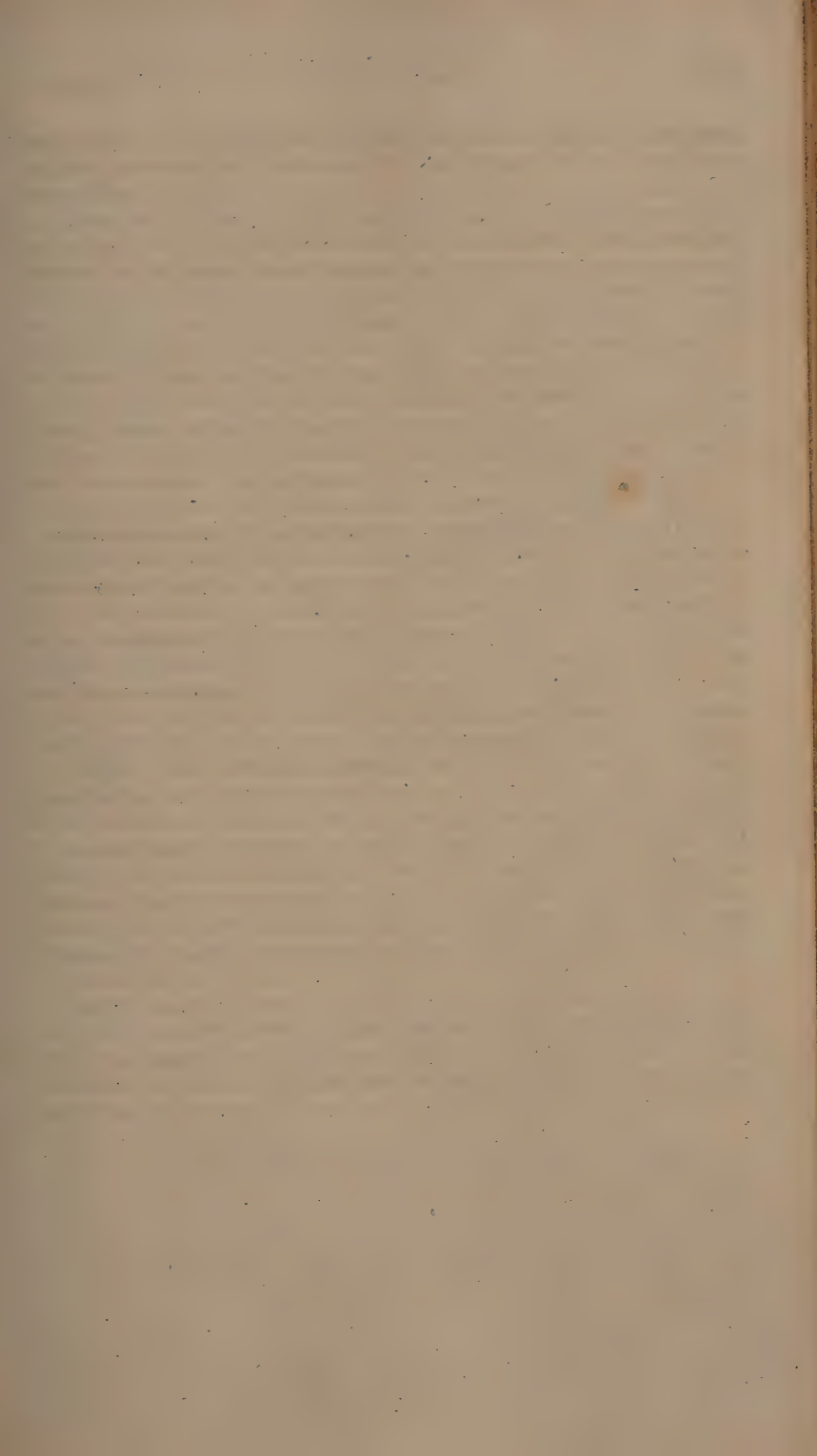
PHRENITIS is an inflammation of the parts contained in the cavity of the cranium, and may affect either the membranes of the brain, or the brain itself. It is called primary, or idiopathic, when it exists independent of any other disorder; and symptomatic when it arises in consequence of some other disease, as fevers and inflammatory affections; which species is that most universally met with, the other occurring but very seldom, at least in this country. In warm climates, it appears to be sometimes produced by exposure to the intense rays of the sun, and often proves quickly fatal.

Its characteristics are vehement pyrexia, severe pain in the head, redness of the face and eyes, intolerance of light and sound, watchfulness, and violent delirium.

The causes which give rise to idiopathic phrensy, are such as directly stimulate the membranes or substance of the brain, or increase the impetus of the blood in its vessels: hence violent fits of passion, intense study, excessive venery, severe exercise, external violence of any kind, such as blows on the head, concussion, fissure or fracture, an immoderate use of vinous and spirituous liquors, a long-continued exposure to the heat of the sun, and the suppression of accustomed evacuations, as hæmorrhoids, menses, issues, milk drying up, &c., may be regarded as the remote causes. Many acute diseases, and a long want of sleep, may give rise to symptomatic phrensy.

The idiopathic is usually preceded by long-continued and almost constant watching, or frightful dreams, acute pains at first in the neck and occiput, afterwards extending to the head, deep respiration, inability to recollect circumstances which have lately happened, suppression of urine, and irregular pulse. As the disease advances, the eyes sparkle, and are violently agitated; there is a ferocity in the countenance, with universal restlessness, deafness, great confusion of ideas, violent ravings, intolerance of light, evident pulsation in the temporal and carotid arteries, and the most furious delirium. The tongue is dry, rough, and of a yellow or black colour; the face is of a deep red; and the pulse is small, quick, and hard.

The symptomatic phrensy is constantly preceded by acute fever, or some inflammatory complaint, and is usually accompanied with



inability to sleep, constant watching, delirium, picking at the bed-clothes, redness and fierceness of the eyes, wild look, and deep breathing.

Phrenitis is distinguished from mania by the quickness of the pulse, and the attendant fever and pain in the head; and from that species of delirium which occurs in low fevers, unaccompanied with inflammation, by the appearance of the countenance and eyes; for in true phrensy the face is red, the features are rather enlarged than shrunk, and the eyes protuberate and sparkle: whereas in the delirium supervening to low fever, the face is pallid, the features are shrunk, and the eyes pearly. It is to be distinguished from synocha by the state of the pulse; as in the latter it is strong and full, whereas in the former it is small, hard, and more rapid. In phrenitis, the delirium is the primary affection; but in synocha, it is consequent upon the general fever.

Phrenitis, whether idiopathic or symptomatic, may always be regarded as a dangerous and alarming complaint: it often proves fatal between the third and seventh day; and, if long protracted, is apt to terminate in mania, or great prostration of strength: it often terminates in stupor and insensibility. In children, an effusion of water between the membranes of the brain, or in the cavities of its ventricles, is a frequent consequence. Grinding of the teeth, white or ash-coloured fæces, suppression of urine, startings of the tendons, with convulsions, cold sweats, a fluttering pulse, and coma supervening on delirium, denote a fatal termination: on the contrary, when there is a copious hæmorrhage from the nose, mouth, or lungs, or even from the urinary passages or hæmorrhoidal vessels, or when diarrhœa ensues, when the delirium is relieved by sleep, and the patient remembers his dreams, when the perspiration is free and general, the deafness diminished or removed, the pulse less frequent, but fuller and soft, and the febrile symptoms become milder, there are hopes of a recovery.

Dissections of persons who have died of phrenitis have shewn the brain and membranes red and inflamed, the membranes considerably thickened and hardened, and in a few instances the pia mater has been found as thick as the dura mater. In some cases, abscesses in the ventricles and adhesions of the dura mater to the skull have been perceived.

On the first coming on of idiopathic phrensy, immediate recourse should be had to bleeding, proportioning the quantity that is drawn off to the age and constitution of the patient, and the severity of the symptoms. The orifice which is made with the lancet should be large, and the patient, if possible, ought to be placed in an erect posture. The blood drawn off is usually buffy and cupped upon cooling. Opening the jugular vein, or temporal artery, may be preferable to drawing blood from the arm; and taking away a considerable quantity at once will certainly be better than drawing off only a little at a time, and repeating the

operation frequently. Thirty or forty ounces of blood taken at one operation, will more decidedly stop the progress of the disease, than sixty or eighty drawn off by dribblets of twelve or fourteen ounces at a time. A man who in a state of health would faint from the abstraction of a pound of blood, will, when an inflammatory diathesis is present, suffer the loss of two or three pounds, without any, or but trifling inconvenience. If the patient is perceived to be much reduced by the largeness of the evacuation, and the disease should nevertheless still continue with violence, the application of several leeches to each temple will be more advisable than any repetition of bleeding from the system. When leeches are not to be procured, blood may be abstracted by means of a cupping-glass and scarificator.

The next proper step to be taken, will be to direct the head to be shaved, and to apply a large blister over it. Linen cloths wetted with vinegar and water, cold spirituous lotions, diluted æther, or iced water, may likewise be kept constantly to the temples and forehead; and they should be re-wetted as often as they acquire the temperature of the scalp by continuance. Topical cold over the region of the brain by a wet towel, or other like medium, will indeed, in many cases, prove more efficacious than the application of a blister; as this has been observed occasionally not only to accelerate the pulse, but likewise to render the patient more unmanageable.

With a view of obviating the inflammatory diathesis, and of diverting the humours from the head, a strong purge* may be ordered; and this ought to be repeated every second or third day during the continuance of the complaint. Purgatives of the saline kind are good antiphlogistics, and may be prescribed as well as others. When we cannot employ purgatives, laxative clysters may be used. In all inflammatory affections of the head, a copious discharge from the intestines will be found highly beneficial; and experience has indeed ascertained that venesection itself is often less powerful. To assist in diminishing the determination of blood to the head, the patient should be kept as near the erect posture as can easily be borne.

Warm bathing of the lower extremities, and the application of rubefacients to them, for the purpose of revulsion, have been very generally employed in idiopathic phrenitis. By some phy-

* 1. R Hydrargyri Submur. gr. viij. —x.

Extract. Colocynth. gr. vj. M.
fiat Pilulæ iij. pro dos.

Vel;

2. R Pulv. Jalapæ, gr. xv.—3i.

Hydrargyr. Submur. gr. vj. M.
ft. Pulvis Catharticus.

* 1 Take Submuriate of Mercury, from
eight to ten grains.

Extract of Colocynth, six grains.
Form the mass into three pills for a dose.

Or,

2. Take Powdered Jalap, from fifteen
grains to one scruple.

Submuriate of Mercury, six grains.
Mix them, and let the cathartic powder be
taken at once.

sicians, and particularly by Dr. Cullen, they have, however, been regarded as ambiguous remedies; and it is probable that they will be likely to do harm, if employed before the excitement has been sufficiently reduced.

From the well known power of digitalis in lessening the action of the heart and arteries, it is probable that small doses of it, administered from time to time, might prove beneficial.

Opiates have not been thought advisable remedies in this disease; hyoscyamus might however be serviceable, if we at the same time employed copious evacuations and a low diet.

In symptomatic phrenitis, particular attention should be paid to the primary disease which has given rise to it, and the treatment ought to be varied according to the nature and progress of the disorder which has occasioned it. If it is in its first stage, and inflammatory, copious bleeding from the system will be necessary; but if it has been of some continuance, drawing blood from the temples, by means of leeches or cupping with scarifications, will be preferable.

Symptomatic phrenitis will not require our using active purgatives; on the contrary, we should keep the body open only with gentle aperients, or laxative clysters, administered from time to time, as the occasion may require. In most cases, the application of a blister to the neck, or between the shoulders, will be proper. As a medicine, the patient may take in both species of phrenitis a diaphoretic bolus* every three hours, washing it down with two or three table-spoonsful of some febrifuge mixture†.

If phrenitis arises in consequence of some suppressed evacuation or eruption, we must endeavour to restore it by the proper means, which will be understood from the nature of the former discharge.

During the whole course of the disease the patient ought to be kept cool, and as quiet and undisturbed as possible, excluding light from him; and his food should be mild and nourishing, consisting of preparations of barley, sago, gruel, &c. Cold acidulated liquors should be allowed with freedom. In idiopathic phrenitis, every part of the antiphlogistic regimen will be necessary.

* 3. R Camphoræ, gr. iv.
Pulv. Antimon. gr. ijss.

Confect. Rosæ. q. s. M.
ft. Bolus.

† 4. R Succ. Limon. f. ʒjss.

Ammonia Subcarbonat. ʒss. vel
q. s. ad ejus saturationem; dein
adde

Aq. Ment. Virid. f. ʒj.

— Fontan. f. ʒiv.

Potassæ Nitræ. ʒj.

Syrup. Rosæ, f. ʒij. M.

ft. Mistura.

* 3. Take Camphor, four grains.

Antimonial Powder, two grains
and a half.

Confection of Roses, a sufficiency,
to form the whole into a small bolus.

† 4. Take Lemon Juice, one ounce and a
half.

Subcarbonate of Ammonia, half a
drachm, or a sufficiency to satu-
rate the acid; then add

Mint Water, one ounce.

Pure Water, four ounces.

Nitrate of Potass, one drachm.

Syrup of Roses, two drachms.

Mix them.

OPHTHALMIA, OR INFLAMMATION OF THE EYE.

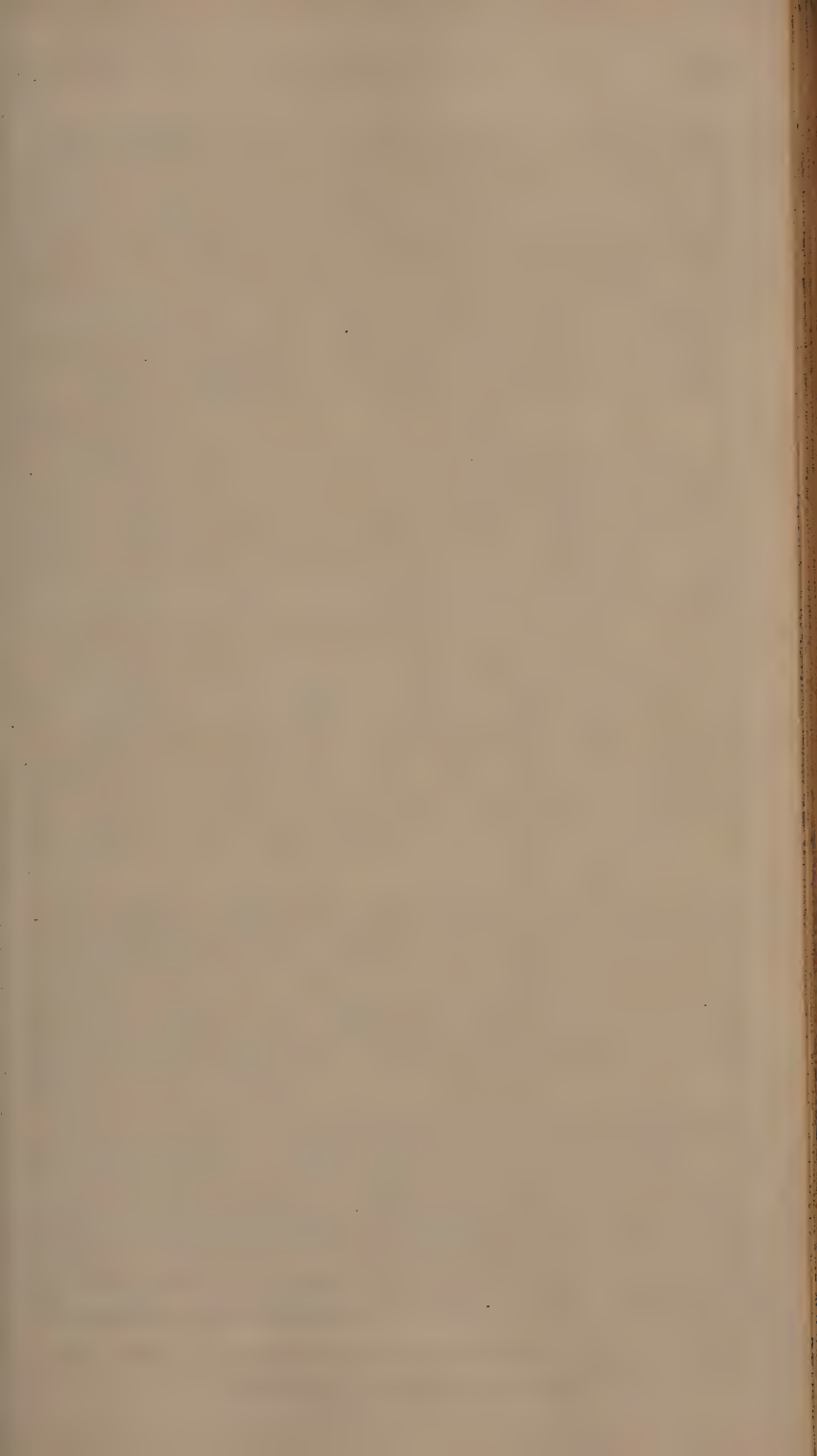
OPHTHALMIA is of two kinds, viz. the idiopathic and symptomatic; the latter proceeding either from diseases of the eye, or parts in its neighbourhood, or from diseases of the system; and the former from the causes hereafter assigned.

In ophthalmia, the inflammation is seated either in the membranes of the eye, its deep-seated parts, muscles, and the lachrymal gland, or in the sebaceous glands placed in the edges of the eyelids: but sometimes all these parts are affected in consequence of sympathy; and indeed it rarely happens that any of these suffer in a considerable degree without the inflammation extending further. It readily spreads along the conjunctiva, from the tarsi to the eye, or in the contrary direction. When the conjunctiva is much inflamed, the adnata soon partakes of the inflammation; and if the complaint increases, it gradually spreads to the deep-seated parts.

With some people there is a great tendency to a recurrence of the disease; and in many cases it has been observed to renew its attacks, or to have regular exacerbations, at a particular time of the day.

The causes producing ophthalmia are, external injuries, such as blows, contusions, and wounds on the eyes; extraneous bodies, of an irritating nature, introduced under the eyelids; exposure to bleak winds and cold; little inflammatory tumours called styes, which rise on the eyelids; various acrid fumes acting as chemical stimuli, such as the smoke of pitcoal, that of wood, turf, &c.; too free a use of vinous and spirituous liquors, the suppression of accustomed discharges, the long application of a strong light, or fixed attention to minute objects, and an acrimony prevailing in the mass of blood. To these causes we may, perhaps, add with some propriety the bare inspection of the eyes of a person when in a highly inflamed state; for although practical writers have not enumerated it among the causes of ophthalmia, yet I have occasionally met with cases which appeared to arise from this, as previous to inspecting the diseased eyes the person made not the least complaint, but very soon afterwards complained of uneasiness in his own. The occurrence once happened indeed to myself, and the inflammation that ensued was very violent. Ophthalmia is sometimes symptomatic of other diseases, such as measles, small-pox, scurvy, scrofula, and syphilis.

A very obstinate and dangerous species of ophthalmia of the purulent nature is now and then produced by the accidental application of gonorrhœal matter to the eye, or eyes. A distressing case of this nature, wherein the patient, a very stout man, was for ever totally deprived of sight by imprudently washing his eyes with his urine, whilst labouring under gonorrhœa, lately came under my observation.



Mons. Sonnini, in his Travels through Egypt, mentions, that ophthalmia is a complaint which is endemical in that country, and that eyes perfectly sound, or which are not swelled, are rarely to be seen. This he attributes to the excessive heat, the air being impregnated with noxious particles, and the acrid and burning dust which the winds scatter in the atmosphere. Another cause of the cecity so general at Cairo, he says, is the frequent watering of the streets and houses. Water, thrown abundantly and frequently upon a burning soil, containing a great many saline particles, produces, he observes, acrid vapours, which may be considered as one of the principal causes of blindness in Egypt.

Sir Robert Wilson mentions* that the Egyptian ophthalmia is supposed to originate in the nitrous particles emitted from the ground by the force of the sun, which are of a quality so pungent and penetrating as to injure the fine vessels of the eye. The acrid and burning dust flying continually in the atmosphere, irritates still more the already affected part; while the reflection of the soil, the heat of the air, and vivid light of the sky, tend to weaken the sight, at last occasioning excessive inflammation.

According to the best information which we have received, this species of ophthalmia arises in the first instance soon after the overflowing of the Nile, or rather on its recession, when a vast quantity of slimy mud is deposited on its banks and other places which were overflowed, and which being acted upon by a powerful sun, send forth miasma, or effluvia, that excite inflammation in the eyes of this peculiar nature. The custom in Egypt of sleeping in the open air, possibly, may increase the power of the cause.

Ophthalmia has not been considered in Great Britain as a contagious disease, although it has often been known to appear as a prevailing epidemic at different times; but it is an undoubted fact, that the Egyptian species is highly contagious. During the campaign in Egypt our troops were dreadfully afflicted with it, and many returned with a total loss of sight; whilst others, still labouring under the disease, propagated it at Malta and Gibraltar, where they first landed; and from which places it was at length brought into this country.

It seems to be established, I think, on the most indisputable evidence, that the Egyptian ophthalmia may be propagated by contagion, and that in this way it has been introduced into our United Kingdom, and has spread in the same manner as in its native soil. The influence of climate, and other local circumstances, on the general character and progress of the disease, cannot, however, be denied. In most of the instances in which this species of ophthalmia has prevailed in this country, it has

* See his History of the Expedition to Egypt.

appeared with mitigated symptoms, in comparison with the disorder as it occurs in Egypt; but it has nevertheless been observed, that where the patients were exposed to the influence of a marshy soil, it equalled in the severity of its symptoms the Egyptian ophthalmia. A modern writer* assures us, that its spreading is not owing to contagion in the ordinary sense of the word (that is, to any infectious matter thrown off from the system of those labouring under the disease, and operating at a greater or less distance from its source), but to the actual conveyance of the purulent matter from the inflamed organ to the eye of a person in health. Dr. Edmonston has also pointed out†, that the sphere of action of this contagion is very limited, and that most of the cases which came under his observation arose from the direct application of virus from diseased to sound eyes.

It has been indeed ascertained as a fact, that many soldiers, with the hope and view of obtaining a discharge from their regiments, absolutely inoculated their eyes with the contagious matter, thereby inducing a loss of sight in one or both.

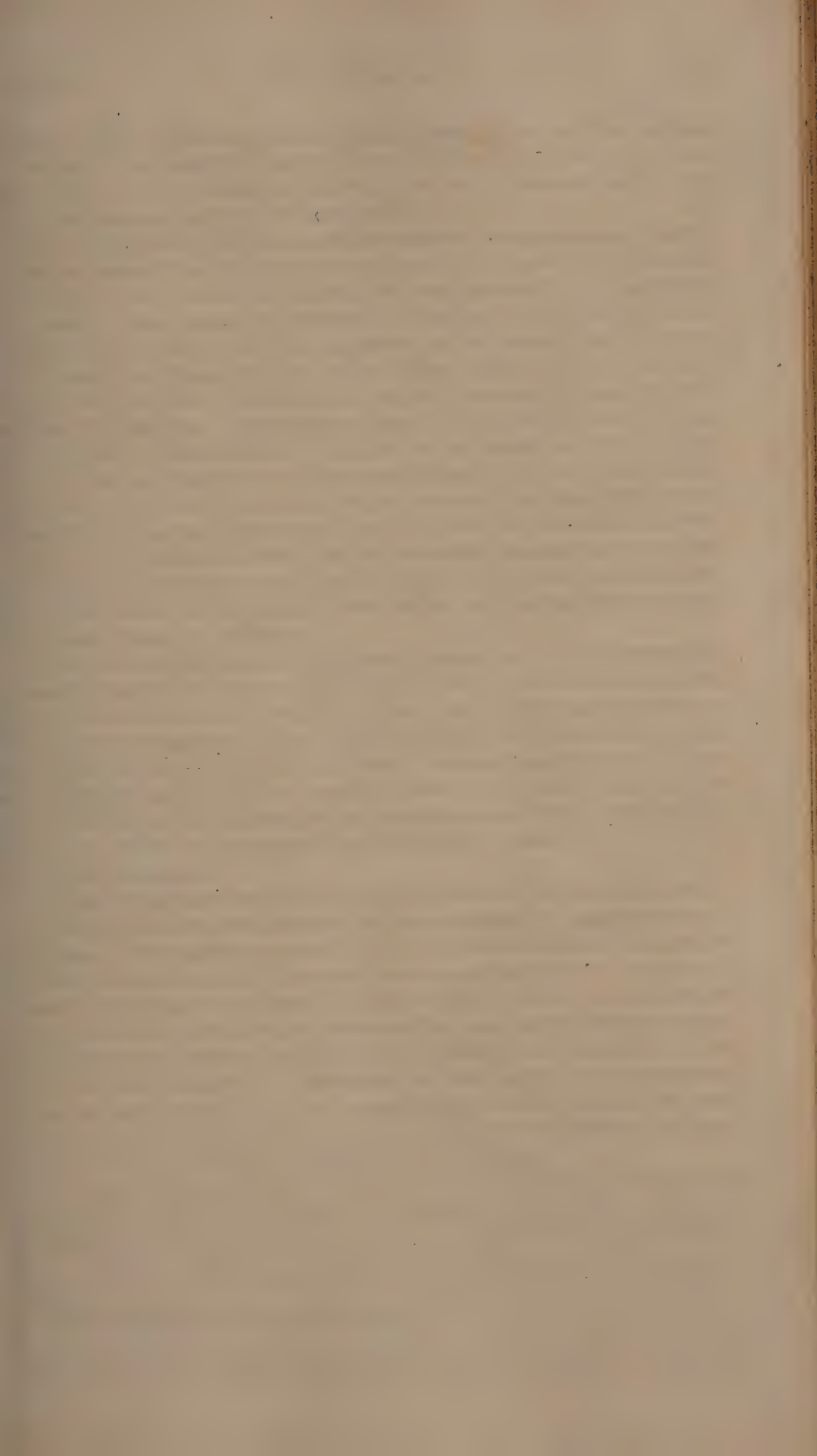
The late Mr. Ware was of opinion‡, that the disease which has appeared as a prevailing epidemic among soldiers since the return of our troops from Egypt, ought to be denominated the purulent ophthalmia instead of the Egyptian; since one of its chief symptoms, and that which distinguishes it from any other, is the profuse discharge of a purulent coloured fluid, closely resembling the pus or matter that issues from an ulcerated surface. He also thinks that it greatly resembles, in many respects, a disorder, which he has described with minuteness in his *Observations relative to the Eye* (see vol. i. pp. 129 and 309), under the title of the *Purulent Eye of new-born Children*, and in which, no less than in that under consideration, the discharge of matter is always profuse.

The common ophthalmia usually comes on with a sensation as if some gritty particles had insinuated themselves under the eyelids, accompanied with great heat, redness, and pricking darting pains. As it increases, the parts swell, and the vessels of the eye become not only increased in size, and turgid, but appear more numerous than in the natural state. Great pain is excited upon the least motion of the ball of the eye; the patient cannot bear the light; and an affusion of tears from the lachrymal gland ensues, which is of so acrid a nature as to excoriate every part on which it happens to fall. When the inflammation runs high, a slight febrile disposition often attends. These appearances, after some days' continuance, gradually abate, and at length entirely cease; but in some cases, a discharge of thick glutinous matter

* See an Account of the Ophthalmia which has appeared in England since the return of the British Army, by J. Veitch, M.D.

† See Edmonston's Account of an Ophthalmia which appeared in the 2d Regiment of Argyleshire Fencibles in 1802, with Observations on Egyptian Ophthalmia.

‡ See his Remarks on Purulent Ophthalmia.



ensues, which collects in considerable quantities about the angles of the eye, particularly during sleep. Where only one eye has been affected, it is often succeeded by an inflammation of the other, particularly in a scrofulous habit.

In the Egyptian ophthalmia, the symptoms which present themselves are somewhat different from those of common ophthalmia. In the early stage of the former, the conjunctiva is red, swelled, and turgid; the secretion of tears is copious; the patient complains of excessive pain, and roughness of the ball of his eye, and he cannot bear even a feeble light. The eyelids are red at their edges, and swelled, and there is often a sense of weight and scalding of the eye. Sometimes there is a soreness of the integuments of the forehead and temples, with rigors, a quick hard pulse, headach, and other febrile symptoms. In a very short time, œdematous swelling and tension of the eyelids, and prodigious tumefaction and turgescence of the conjunctiva, with a feeling as if the eye was about to burst out of the head, succeed to the other symptoms. The least ray of light falling on the retina gives acute pain, and excites in the patient the feeling as if some sharp instrument was thrust into his eye.

In some cases the under eyelids are turned somewhat outwards; in others both eyelids are closed and swollen, and the skin of these parts has an efflorescent shining appearance. It is not unusual to see the eyelids open, and the conjunctiva so swelled and turgid as to protrude from the eye in the form of two or three folds. When the tumefaction of the conjunctiva is not very great, and the eye can be brought fully into view, the cornea sometimes appears pellucid, the pupil is contracted, and the iris discoloured, or, as it were, full of spots.

As the inflammation proceeds, a secretion of purulent-like matter takes place from the surface of the conjunctiva and glands of the tarsi. This matter is pent up for some time within the eyelids in those cases in which the tarsi come in contact; but in others, where they remain separated, it flows from the eye mixed with tears. It is so acrid as to irritate the eye exceedingly, and to excoriate the palpebræ and cheeks in passing over them. In this stage of the disease the sufferings of the patient are excessive. He is hot and feverish, cannot remain long in one posture or situation, gets no sleep either by night or day, and describes his feelings, as if boiling water was poured into his eyes.

If a sight of the ball of the eye can now be obtained, it is found bathed with the purulent matter; the cornea is muddy in a part or the whole of its extent, or its surface is studded with small white spots. These appearances denote the commencement of a suppuration of the cornea. Sometimes the whole of the cornea is included in the suppuration, and destroyed; the iris, is laid bare, the lens and vitreous humour are forced on the iris, or entirely evacuated, and even the form of the eye does not remain. At other

times only a portion of the cornea suppurates, and the sight is more or less affected afterwards, according to the point at which the suppuration has taken place, and the extent to which it has gone. If the abscess be situated before the pupil, and if it penetrate the whole depth of the cornea, the aqueous humour, in escaping, will carry with it a portion of the iris through the aperture in the cornea; and the pupil will be in general totally obliterated by the protrusion of the iris, and its subsequent adhesion to the sides of the ruptured cornea.

During some violent paroxysm of pain, from the excessive increased volume of the whole compages of the eye, locked within the orbit, the coats of the eye at length give way. By this circumstance the tension in the parts is considerably diminished, the inflammation gradually subsides, and the state of the eye begins to improve, unless in the melancholy instances in which the iris continues to protrude.

Such is the most violent form of the disease; but even in slighter cases, where no rupture of the cornea takes place, on the discharge of pus ceasing, a number of granulations are sometimes perceived to arise, on an inspection of the eye, from the interior of the eyelids, and to present a shocking spectacle.

With some, the Egyptian ophthalmia lasts only nine or ten days; in others, the patients have suffered for months: and unfortunately there is no security, we are informed, against a new attack, even after a perfect recovery.

The common ophthalmia, when slight, and not symptomatic of any other disease, will readily give way to proper means; but if it is very violent, or has continued for any length of time, it is apt to occasion specks, or to terminate in a dimness of sight or opacity of the crystalline lens. In some cases, the inflammation terminates in suppuration of the cornea and deep-seated parts. When it arises in a scrofulous habit, or is symptomatic of syphilis, the cure is often tedious.

In the treatment of ophthalmia, its varieties of idiopathic and symptomatic, and of acute and chronic, ought duly to be considered, and to form the basis of our practice. Our object therefore should be, to determine with precision, how far each particular case is to be referred to one or other of these kinds, and to adopt our plan accordingly.

Those who are engaged in an extensive practice, now and then meet with cases of idiopathic and acute ophthalmia, accompanied not only with a high degree of organic inflammation, but likewise with much systematic derangement, such as thirst, great heat of the body, fulness and frequency of the pulse, severe pains in the head, and violent throbbings of the temporal arteries. Such instances are, however, rare; but when they do occur, general bleeding or venesection ought not to be neglected; and we should take care to proportion the quantity we draw off to the existing

circumstances, and quickly to repeat it, if necessary. In patients afflicted with violent ophthalmia, it will always be best to bleed from a large orifice as they stand erect upon their feet, as it sooner makes an obvious and great impression upon the circulation than in any other way, and thereby enables us to attain our object by a moderate abstraction of blood: the tunica adnata, which before venesection in this way had been intensely red, will often be found comparatively whitened after it, with a most sensible relief in almost every other respect. In the worst cases, the blood may be drawn from the jugular vein or temporal artery, in preference to taking it from the arm.

In general, however, ophthalmia is only a local affection, accompanied with little or no fever, except what is excited by the irritation or pain in the organ, and this but trifling; and therefore it will not often be necessary to resort to general bleeding: the preferable way will be to draw blood from the neighbourhood of the affected part, by applying several leeches round the eye; which process we may repeat again and again, as long as the inflammation continues. They ought not, however, to be applied on the upper, but on the under lid. We are informed by Dr. Crampton*, that from his having observed in many instances what little impression is made upon the inflamed and turgid vessels of the conjunctiva by the application of leeches, even in great numbers, to the eyelids or temples, and that, when applied to the eyelids in particular, they frequently excited erysipelatous affection—he was led to try the effect of applying a leech or two to the inflamed conjunctiva itself, where it lines the lower eyelid; and from the success which attended the practice in several cases, he can with confidence recommend it to other practitioners, as affording the most powerful means of which we are possessed for subduing inflammation of the eye, whether chronic or acute, and whether affecting the conjunctiva, or the more interior structures of the organ. The mode of application is simple, and as follows: The patient is to be placed with his back to the light, that the lower eyelid may be everted without exciting pain; a small leech or two should then be allowed to fix upon that part of the inflamed membrane which covers the tarsus, taking care that it fastens neither upon the ciliary margin nor upon the eye itself. The leech fixes, and fills himself in such a situation much more quickly than upon a cuticular surface.—Where leeches cannot be procured, blood must be drawn from the temples by scarifying and cupping. If the inflammation runs high, so as to endanger vision, by producing an opacity, it will be advisable to make scarifications daily, with the edge of a lancet, on the turgid vessels of the adnata itself; which, if done by a steady hand, will be attended with no kind of danger, but, on the contrary, with infinite advantage. Its

* See Dublin Hospital Reports, Vol. III. Article 1st.

effects in diminishing inflammation are very great, even though no more than a few drops of blood be obtained; and the relief is frequently so considerable as to induce patients, after once undergoing the operation, to request its repetition.

It is almost unnecessary to observe, that when ophthalmia has arisen from any extraneous body getting into the eye, as particles of sand, dust, lime or metal, small flies, the hairs of the eyelids, &c., the irritating cause ought immediately to be removed, and the part be defended from the light by the patient's wearing a deep shade of green silk, and sitting in a darkened room.

Having adopted topical bleeding, we may then order some active purgative to be taken; and this should be repeated every third or fourth day, as long as may be found necessary.

A few grains of hydrargyri submuriæ, with a sufficient quantity of jalap, or a solution of any of the neutral salts, will best answer the intention.

Where the complaint has arisen from exposure to cold, or other causes suppressing the perspiration, it is probable that the patient may receive benefit from small doses of some antimonial preparation, given so as to excite a proper diaphoresis.—(See Synochus.) The pediluvium may also be employed with the same intention.

It was a common practice of the late Mr. Saunders, who was esteemed a very eminent oculist, to employ emetics, particularly a solution of tartarized antimony, in the early stage of every variety of acute ophthalmia, so as to produce nausea or full vomiting; and the same practice has been adopted by Sir William Adams with the greatest success, especially in that species of it which has been denominated the Egyptian.

To abate the inflammation and irritation, it is customary to have recourse to the frequent application of some cooling and astringent wash. Such remedies, applied to the eye by means of an eye-cup, or by wet pledgets, prove, beyond a doubt, highly serviceable. Another mode of using washes is by everting and extending the eyelids, and then injecting the fluid over the whole surface by means of a small syringe made of elastic gum or ivory. Any of the undermentioned lotions* may be used. Where the

* 1. R Zinc. Sulphat.
Plumbi Acetatis. aa gr. viij.

Aq. Distillat. f. ℥vj. M.
ft. Collyrium.

Vel,

2. R Liqueur. Ammon. Acetatis,
Aquæ Rosæ, singul. f. ℥ij.
Misturæ Camph. f. ℥j. M.

Vel,

3. R Aluminis Purif. 3ss.
Aq. Rosæ, f. ℥vj. M.

* 1. Take Sulphate of Zinc,
Acetate of Lead, of each eight
grains.

Distilled Water, six ounces.

Mix them for a Wash for the eyes.

Or,

2. Take Solution of Acetate of Ammonia,
Rose Water, of each two ounces.
Camphor Mixture, one ounce.

Mix them.

Or,

3. Take Alum, half a drachm.
Rose Water, six ounces.
Mix them.

pain is very acute, forty or fifty drops of the vinous tincture of opium may be added to any of the foregoing applications; or the eyes may be bathed frequently with a decoction of bruised poppy-heads. In such cases, an internal use of opium will also be advisable; and it may therefore be taken in doses of a quarter of a grain, repeated every four or six hours.

For the purpose of appeasing heat and inflammation in the eyes, some practitioners prefer warm collyriums to cold ones; and among this number, I think, was the late Mr. Ware. The fact is, that inflammation of the eyes sometimes yields to cold applications, and at others it resists them. In instances of the latter nature, the application of warm fomentations may be used. The alternate use of cold and hot applications has sometimes succeeded, when neither of them singly appeared capable of putting an end to the diseased action.

In inveterate cases of ophthalmia, where inflammation prevails in a high degree, it probably might be advantageous to drop into the eye a strong infusion of digitalis, or the extract of belladonna dissolved in water. The former, I understand, is much employed by an eminent veterinary surgeon for the purpose of subduing violent inflammation in the eyes of horses, and with a very good effect.

When ophthalmia is found not to yield to bleeding, both general and topical, duly repeated, purgatives, emetics, fomentations, and the other means which have been pointed out, it will be proper to put a blister at the back of the neck, or behind the ear on the side with the eye which is affected, supposing only one to be diseased; and to promote a proper discharge, it ought to be dressed with some stimulating ointment*. In those cases where the disorder appears to be constitutional, or to be kept up by any acrimonious humour in the habit, issues between the scapulæ, or the insertion of a seton in the neck, will be advisable.

Errhines have been recommended in instances of habitual ophthalmia, and probably may sometimes prove good auxiliary remedies. The pulvis asari compositus may be used on the

Vel,

4. R Aq. Rosæ, f. 3. ℥iij.
Liquor. Plumbi Subacetat. ℥ xij. M.

Vel,

5. R Zinc. Sulph. gr. x.
Aq. Rosæ,
Mistur. Camphor. aa f. ℥iij. M.

- * 6. R Cerat. Resinæ, ℥j.
—— Cantharid. ℥iij. M.

ft. Unguentum.

Vel,

7. R Cerati Sabinae, ℥i.

Or,

4. Take Rose Water, three ounces.
Solution of Subacetate of Lead,
eighteen drops.
Mix them.

Or,

5. Take Sulphate of Zinc ten grains.
Rose Water,
Camphorated Mixture, of each
three ounces.

Mix them.

- * 6. Take Resin Cerate, one ounce.
Cerate of Spanish Fly, three
drachms.

Mix them into the form of an ointment.

Or,

7. Take Savine Cerate, one ounce.

occasion. The pulvis digitalis will likewise excite a copious excretion from the membrane which lines the nostrils, although not generally known to possess such a power.

In chronic and strumous ophthalmia, the vinous tincture of opium is one of the best applications we can employ, and was much used by the late Mr. Ware in such cases.

It has been mentioned, that in ophthalmia the eyelids are apt to be glued together (particularly during sleep) by a thick glutinous matter which is secreted. To prevent this inconvenience, their edges should be anointed with a little soft ointment* every night, or every night and morning. In the ophthalmia tarsi, arising from a scrofulous habit, the unguentum hydrargyri nitricooxydi, mixed with an equal quantity of adeps præparata to render it milder, is one of the most powerful remedies we can employ. Red precipitate mixed with lard is sometimes used, and it seems to be serviceable by destroying the small ulcers that now and then appear on the edges of the eyelids. About fifteen grains of it to an ounce of adeps præparata seems to be the strongest proportion that can be used with safety. It will seldom be necessary to use poultices for an inflammation of the eye, except it is of the purulent kind; in which case we may apply with advantage one made by stirring a lump of alum in the whites of two eggs, until they form a coagulum, and this is to be laid to the eye between two pieces of thin linen or muslin. Cold poultices of rasped potatoes and turnips are often used on such occasions.

Mr. Ware was of opinion, that the purulent is very similar to the gonorrhœal ophthalmia. He found the purulent eye, we are told†, most commonly to occur in the children of those women who have had an acrimonious discharge from the vagina at the time of delivery; and the purulent ophthalmia of adults, he thinks, is very generally found connected with some gonorrhœal affection. In public schools he noticed the disease to spread, obviously in consequence of the indiscriminate use of basins and towels among the children. Hence, he believes that the purulent ophthalmia arises from the direct application of some poisonous matter to the eyes.

Two or three cases of purulent ophthalmia in infants, and evidently arising from their mothers being afflicted with leucorrhœa at the time of delivery, have lately been under my care; and I am apt to think that the reason why more children are not affected in

† See his Remarks on the Purulent Ophthalmia.

* 8. R Tutia Præparat. ʒj.
Unguent. Cetacei, ʒj. M.

Vel,

9. R Adipis Præparat. ʒj.
Zinc. Sulphat. ʒss. M.

Vel,

10. R Ceratum Plumbi Acetatis.

* 8. Take Prepared Tutty, one drachm.
Spermaceti Ointment, one ounce.
Mix them.

Or,

9. Take Prepared Lard, one ounce.
Sulphate of Zinc, half a drachm.

Mix them.

Or,

10. Take Cerate of Acetate of Lead.

the like manner, is owing to the careful ablution they usually undergo immediately after birth, and before they are dressed. The disease is found to prevail mostly among the lower classes of society, who, we may naturally suppose, are not so attentive to cleanliness as those in a higher sphere of life.

Mr. Gibson, of Manchester, seems to have been the first to attribute this disease in new-born infants to the cause just assigned; and he thinks it highly probable, from the frequent coincidence of fluor albus in the mother, and the puriform ophthalmia in the child, that these disorders stand in the relation of cause and effect to each other: but, at the same time, he by no means wishes it to be understood, as supposing leucorrhœa to be the only cause of a puriform discharge from the eyes of an infant. In some cases, it possibly may arise from exposure to cold, or from a peculiar constitution of the atmosphere.

Mr. Ware appears to have described and treated one of the symptoms of purulent ophthalmia as if constituting it, and seems to have overlooked the relation between the inflammation and the discharge, of cause and effect. He states the first stage of the disease to be an increased discharge from the minute pores of the conjunctiva; and attributes the subsequent affection of the cornea to the eroding quality of the retained matter, joined to the pressure of the swollen eyelids. In conformity to this hypothesis, he thinks the indication of cure consists in immediately constringing the relaxed vessels by strong styptic injections. The late Mr. Saunders* has stated the disease to consist in an inflammation of the conjunctiva, which is affected much in the same way as the membrane of the urethra in gonorrhœa: he therefore advises that a strict antiphlogistic plan should precede the use of injections, and that when the activity of the inflammation has subsided, the injections should be of a mild nature.

If ophthalmia is dependent on a venereal taint, mercury is the remedy we must rely on to remove it. When it arises in a scrofulous habit, affecting chiefly the tarsi, and is attended with ulcerations, as is often the case, cinchona bark, with alteratives, mineral waters, and sea bathing, will be the most proper remedies. In these cases, hemlock, combined with cinchona bark, has sometimes proved serviceable. Cinchona, with the carbonate of soda, may also have a good effect. At the same time that we are employing these remedies, we ought not to neglect topical applications. The edges of the eyelids may be smeared every morning and night with a little ointment†, composed of mercury or the sulphate of zinc.

* See his Treatise on some Practical Points relating to the Diseases of the Eye.

† 11. R Unguent. Hydrarg. Nitratis,

Adipis Præparatæ, ʒss. M.

ft. Unguentum.

† 11. Take Ointment of the Nitrate of Mercury,

Prepared Lard, of each half an ounce.

Mix them.

When a speck has ensued in consequence of previous inflammation, which has destroyed some part of the transparency of the cornea, it may be touched with some gentle escharotic on the point of a fine camel's hair pencil twice a day. In employing escharotics for the removal of opacities of the cornea, much care and attention will, however, be requisite, otherwise they may prove more injurious than serviceable.

That species of opacity which is seated on the external surface of the cornea, and accompanied with some growth, may sometimes be removed by the knife in a steady hand, or by dividing the blood vessels going to it, but not always, as it is sometimes so much diffused as to render the operation impracticable. A case of opacity, which arose from a local injury, and which extended nearly over the whole lucid cornea, lately fell under my observation, and was entirely removed by having a few drops of the liquor cupri ammoniati admitted into the eye every day.

In opacities of the cornea, the application of animal gall to the part has been found to be efficacious, when other remedies have failed. Being a stimulant, it ought never to be applied while the inflammatory action is increasing, but should not be delayed one minute after the inflammation is at a stand, as an indolent unhealthy state is apt to take place, which too often terminates in opacities, that no applications can afterwards remove. It may either be used pure, or diluted; perhaps the latter may be most advisable at first, as it is apt to occasion a painful sensation; but this, however, soon goes off. Its effects seem to be similar to those of a weak solution of the argenti nitras.

We are informed by Mr. Ware*, that he has had occasion to attend a considerable number of cases, in which an opacity of the crystalline humour was produced by some violence done to the eye; and in most of these, the opacity was dissipated, and the sight restored, during the external application of æther.

He says, "In using this remedy, I have sometimes diluted it with a third or a fourth of a weak solution of hydrargyri oxymurias; but in general I have used the æther alone, which has been applied by means of a camel's hair pencil to the eye itself. The application of the remedy occasions a very pungent pain in the eye, with considerable redness in the tunica conjunctiva; but these go off in a few minutes, and leave the eye as easy, and the conjunctiva as pale, as they were before the æther was used."

In all cases of ophthalmia, it will be requisite to avoid every thing which might occasion irritation; for which reason the patient ought to be confined to a dark chamber, or, at least, he should wear a blind of green silk over the eye, to prevent a great

* See his second edition of Observations on the Cataract.

Vel,
12. R Zinci Sulphat. ʒj.
Adipis Præparat. ʒj. M.

Or,
12. Take Sulphate of Zinc, one scruple.
Prepared Lard, one ounce.
Mix them.

glare of light; and he ought likewise to abstain from reading, writing, and from all food of a heating or stimulating nature, and a use of vinous or spirituous liquors.

In severe cases, the diet should be very spare and light, and the drink consist chiefly of some mild farinaceous decoction, which, while it allays thirst and supplies sufficient nourishment, tends both to moderate excitement and promote perspiration.

After the removal of ophthalmia, it may sometimes be necessary to employ means to prevent its return, by continuing the use of blisters behind the ears, or the insertion of an issue. In some instances, however, it may be connected with a debilitated habit, and then the best means of preventing its return are those which tend to strengthen the vessels of the eye, or the system in general; and these will sometimes remove habitual ophthalmia when all others have failed.

One of the most powerful of these means is the cold bath, which may be employed either by immersing the whole body, or by washing the head in cold water once or twice a day. The application of cold water to the eyes themselves, or of any astringent collyrium, by means of an eye-cup, twice or thrice a-day, may likewise be serviceable in preventing the return of ophthalmia, or removing it after it has become habitual. Cinchona, and other tonics, have also been resorted to with a good effect.

In that species of the disease which has been denominated the Egyptian ophthalmia, a favourable termination will uniformly depend on our being able to moderate the inflammatory affection during its earliest stage, and therefore the first and great object of the surgeon should be directed to this end: for, if this is not effected, the structure of the visual organ will be destroyed, or be so altered as to impede or annihilate its functions. By a prompt application of proper means at the commencement, every bad symptom most likely will be arrested.

Bleeding, to the amount of sixteen or twenty ounces, or more, according to the urgency of the case, and the strength of the patient, is the first step to be adopted: and perhaps it may be preferable to draw off this quantity of blood from one or both of the temporal arteries, as one or both eyes may be affected, in preference to taking it from the arm; and to prevent secondary hæmorrhage, it may be advisable to secure the divided artery by the tenaculum, as the pressure of a tight bandage round the temples will, in severe cases, add to the tumefaction of the palpebræ, and increase the pain and inflammation. Should the inflammation of the organ not be greatly moderated in six or eight hours after this bleeding, it will then be necessary to take away more blood in the same manner as before, again regulating the quantity according to the severity of the complaint. If our attempts to subdue the inflammation still prove ineffectual at the expiration of eight hours more, and the symptoms seem to require it, the operation ought to be repeated a third time in sufficient quantity.

We are told by Dr. Veitch*, that the principal remedy which has been productive of any good effect in the ophthalmia that has prevailed among the British soldiers since their return from Egypt, and to which the name of Egyptian ophthalmia has been applied, is bleeding; but in order to ensure its full power, that it has been found necessary to carry this evacuation to a great extent, and with a freedom far beyond what we have been accustomed to recommend. In short, he informs us that he found it absolutely necessary to draw off upwards of twenty ounces at a time, or rather to bleed the patient *ad deliquium animi*, and to repeat the operation pretty frequently to this extent.

Immediately after the first bleeding in the Egyptian ophthalmia, an active dose of purgative salts is to be administered, and this should be repeated every second or third morning. A large blister is to be applied at the same time either over the whole of the head, or behind the ears, and to the nape of the neck. The patient is to be lodged in a dark but well-ventilated room, and to be confined to a spare and antiphlogistic diet.

A tardiness in the use of evacuates, particularly a sparing use of the lancet, or its not being early resorted to, may be considered, in most instances, as the chief cause of subsequent disorganization and destruction of the eye, in the various shapes of suppuration, ulceration, sloughing, and rupture of the cornea, adhesions of the iris, opacities, &c., which are met with in cases of Egyptian ophthalmia; and even if these bad results do not occur, such omissions will tend to form and protract an obstinate chronic stage, from the debility induced in the vessels of the membranes, owing to previous excessive action and distention.

In this species of ophthalmia, as well as in severe cases of the common kind, it may be advisable to make frequent scarifications on the ball of the eye; but perhaps it may be the better way to carry the lancet along the inside of the lower lid, parallel to its edge, and not far distant from it. Scarifications made in this way will be far preferable to pricking the eyelid repeatedly in quick succession, as is sometimes practised. The issue of blood from the scarifications may be assisted by gently everting the lid with the end of the finger; and it will be more useful to take off the finger occasionally, and then to apply it again, and thus renew the eversion, than to continue the finger steadily on the lid.

Whilst, by large and sudden evacuations of blood from the system, as well as from the affected eye, we lessen the violence of the disease, and prevent either an opacity of the crystalline lens, or a rupture of the cornea from ensuing; we are, at the same time, to moderate the external symptoms, and lessen the secretion by local applications—linen cloths, dipped in some cooling lotion, (see those before prescribed,) should therefore be kept constantly to the eye, or eyes, if both are affected; and such applications as

* See his Treatise on the Egyptian Ophthalmia.

experience seems to have accommodated to the different stages of the disease, ought to be carefully dropt into the eye. The best appear to be the liquor plumbi subacetatis, properly diluted; solutions of alum, or sulphate of zinc, or the camphorated collyrium, prescribed below *, or before mentioned.

When we consider, however, that the morbid mucus is confined between the swelled conjunctiva that lines the eyelids, and that part of it which covers the globe of the eye, it must be evident that, in order to bring the matter effectually away, the lotion must be propelled over the eye with some degree of force: and this cannot be better effected than by the use of a small blunt-pointed syringe, by means of which the medicated liquor may be conveyed over the whole surface of the eye, and the retained matter be each time entirely cleared away. The injection ought to be repeated at least once an hour during the height of the disease; but when the violence of the inflammation has abated, and the quantity of the discharge is decreased, a longer period may be allowed to intervene between the times of applying it.

In those cases where the pain of the eye and tumefaction of the conjunctiva are very considerable, it may be advisable not only to make the lotion of a weak standard, and to leave longer intervals between the times of employing it, but occasionally to interpose the injection of merely tepid water. Under the like circumstances, the frequent application of hot water also, or of a warm decoction of poppy heads, by means either of a flannel or of a large sponge, may likewise prove serviceable. During the inflammatory stage of the disease, and when the irritation is great, a warm poultice of bread and milk may be applied to the eye, renewing it frequently throughout the day. Possibly it might be of service to shave the head, and keep cloths wetted with vinegar to it, the forehead and temples.

The introduction of the vinous tincture of opium by a few drops at a time into the eye, will have a very good effect when employed in the early stage of the disease.

In the intermittent form of this and the other species of ophthalmia, where the pain observes periodical paroxysms, probably the administration of cinchona, during the intervals, may be attended with a very good effect.

Such are the means to be adopted in the treatment of this variety of ophthalmia. It sometimes happens, however, that in spite of

* 13. R Cupri Sulphat.

Bol. Armen. āā gr. viij.

Camphoræ, gr. ij. Misce, et affunde

Aq. Bullientis, f. ℥viij.

Cum lotio sit frigida, effundatur liquor limpidus, et sæpissime injiciatur paululum inter oculum et palpebras.

* 13. Take Sulphate of Copper.

Armenian Bole, of each eight grains.

Camphor, two grains; mix them, and add

Boiling Water, eight ounces.

When the liquor is cool, pour it off clear, and let a little of it be injected frequently between the eye and eyelids.

our utmost endeavours to subdue the inflammation, we cannot succeed, and that there is great danger of a rupture of the cornea taking place, discoverable by the cornea losing its transparency, and a white ring forming round its circumference. In such cases, it will be highly advisable to evacuate the aqueous humour, by making a puncture with a common lancet into the anterior chamber of the eye.

This operation, it appears, has been performed in several instances with perfect safety, and the highest advantage, by Mr. Wardrop *, of Edinburgh, under the like circumstances; and he thinks it probable that the great and immediate relief afforded by it arises chiefly from the sudden removal of tension.

The late Mr. Ware † coincided with Mr. Wardrop on the propriety of puncturing the cornea to evacuate the aqueous humour when a rupture of it is threatened; and he very properly observes, that by suffering this to happen spontaneously, it may take place in such a part of it as afterwards to impede the passage of light, but that, when the opening is made by a surgeon, it may be done in such a place as to obviate any impediment of the kind.

We are informed by Baron Larry ‡, that in order to be secure from ophthalmia in Egypt, it will be necessary to wash the eyes, and, indeed, the whole of the head, frequently with warm water and vinegar; to avoid the direct impressions of light and dust during the day; at night, to be covered from head to foot; to put a bandage over the eyes; to avoid, as much as possible, damp and marshy places; and to keep up the perspiration, and encourage moderate sweating, by a use of the Egyptian baths and exercise during the fine season. It will also be necessary to avoid strong liquors, and heating and indigestible aliments; fortifying the stomach by tonics, such as the bitter infusions.

OTITIS, OR INFLAMMATION OF THE EAR.

INFLAMMATIONS of the ear are for the most part unaccompanied by pyrexia, although the sufferings of the patient are sometimes very great; but in some instances they are attended with fever, assume a formidable appearance, coma, delirium, and convulsions supervene, and even a fatal termination has been the consequence.

Otitis is produced by the same causes with other inflammations, but by none more readily than a partial exposure to cold.

In the treatment of this complaint we should proceed on the same principles as in that of ophthalmia. While it is merely a local affection, local remedies alone are necessary, if we except cathartics, for the purpose of dislodging the contents of the primæ

* See vol. iii. of the Edinburgh Medical Journal, p. 56.

† — his Remarks on Purulent Ophthalmia.

‡ — Memoirs of Military Surgery.

viæ. Local blood-letting, the application of a blister behind the ear, and of warmth, are the means chiefly to be relied on.

If the pain does not abate, but, on the contrary, should continue to increase, we may expect a suppuration to ensue. This we may then encourage by the application of emollient poultices and warm vapour; and when the abscess bursts, or is opened, we may syringe the ear from time to time with some mucilaginous and gently astringent decoction.

When otitis is accompanied with universal pain diffused over the whole head, fever, delirium, or coma, the most powerful general means, are to be combined with the local ones, as recommended in phrenitis.

Suppuration is generally the consequence of these violent forms of the disease, and then the structure of the whole internal ear is often destroyed, the bones being discharged through the meatus auditorius with much purulent and fetid matter. In such cases, the sense of hearing in the ear affected is wholly lost of course.

Fistulous ulcers of the internal ear are now and then the consequence of suppuration, and prove very troublesome.

Ear-ach sometimes continues many days without any apparent inflammation, and is then frequently removed by filling the ear with cotton or wool, wetted with tincture of opium or æther, or even with warm oil, or warm water. Sometimes a pain in the ear is the consequence of association with a diseased tooth, in which case the æther should be applied to the cheek over the suspected tooth, or a grain of opium, with a little camphor, be applied to the tooth itself.

CYNANCHE TONSILLARIS, OR INFLAMMATORY SORE THROAT.

IN this complaint the inflammation principally occupies the glands, such as the tonsils; but it often extends through the whole mucous membrane of the fauces, so as essentially to interrupt the speech, respiration, and deglutition of the patient.

It is readily to be distinguished from cynanche maligna by the strength of the pulse, the greater difficulty of deglutition, the absence of ulcers in the throat, and the accompanying fever being synocha.

The causes which usually give rise to it are, exposure to cold, either from sudden vicissitudes of weather, from being placed in a partial current of air, wearing damp linen, sitting in wet rooms, or getting wet in the feet, or coming out of a heated and crowded room suddenly into the open and cool air; all of which may give a sudden check to perspiration. It may also be occasioned by violent exertions of the voice, blowing wind instruments, acrid substances irritating the fauces, and by the suppression of accustomed evacuations. It principally attacks the youthful, and those of a full and plethoric habit; and is chiefly confined to cold

climates, occurring usually in the spring and autumn ; whereas the cynanche maligna chiefly attacks those of a weak irritable habit, and is most prevalent in warm climates. The former differs from the latter likewise in not being contagious. In many people there seems to be a particular tendency to this disease, as from every considerable application of cold it is readily induced.

An inflammatory sore throat discovers itself by a difficulty of swallowing and breathing, accompanied by a redness and tumour in one or both tonsils, dryness of the throat, foulness of the tongue, lancinating pains in the parts affected, hoarseness of the voice, a frequent but difficult excretion of mucus, and some small degree of fever. As the disease advances, the difficulty of swallowing and breathing becomes greater, the speech is very indistinct, the dryness of the throat and the thirst increase, the tongue swells and is encrusted with a dark fur, and the pulse is full, hard, and frequent, beating from 100 to 140 in a minute. In a few cases, small white sloughy spots are to be observed on the tonsils, and in very violent ones there is complete deafness. When the symptoms of cynanche are considerable, the whole face partakes of it, the eyes are inflamed, and the cheeks florid and swelled, respiration is performed with difficulty, and the patient is obliged to be supported in nearly an erect posture to prevent suffocation. Even delirium and coma sometimes supervene. If the inflammation proceeds to such a height as to put a total stop to respiration, the face will become livid, the pulse will sink, and the patient quickly be destroyed.

The chief danger arising from this species of quinsey is, the inflammation occupying both tonsils, and proceeding to such a degree as to prevent a sufficient quantity of nourishment for the support of nature being taken, or its wholly impeding respiration : but this seldom happens, and its usual termination is either in resolution or suppuration. When proper steps are adopted early, it will in general readily go off by the former. Cynanche tonsillaris rarely terminates either in gangrene or scirrhus.

Little fever, free respiration, deglutition not much impeded, the inflammation being of a vivid red colour, universal but gentle diaphoresis, and a copious ptyalism or moderate diarrhœa coming on about the fifth day, are to be regarded as symptoms which denote a termination of the disease in resolution.

When suppuration is likely to ensue, the parts affected become more pale and less painful, a sense of pulsation is felt in them, and there are slight rigors. The suppuration sometimes takes place at the lower part of the tonsils, and then the matter is discharged into the œsophagus, and passes into the stomach, and it is only known to have happened by the immediate relief which the patient experiences. Sometimes, however, it is brought up, and discharged by the mouth, being of a very clotted appearance, often mixed with blood, of a nauseating bitter taste, and fetid smell. The relief experienced by the discharge is often very

remarkable from its suddenness; for the person who a few minutes before was not able to swallow the smallest quantity of any thing, and who breathed with great difficulty, now feels perfect ease, and is able to eat and drink heartily. Sometimes, however, the disease does not terminate by a proper suppuration, but in several small abscesses, which produce trifling superficial ulcers, being of a white or grey colour, similar to aphthæ; whereas those in *cynanche maligna* are of a dark brown, or black colour. If gangrene is to take place, the parts affected lose their red and shining colour, and from being tense and tumid, they become flaccid, brown, and livid; the pulse, from being strong, becomes small, weak, and irregular; the face assumes a cadaverous appearance; cold clammy sweats break out; the extremities are cold; coma, and symptoms of debility make their appearance, and destroy the patient.

Where *cynanche tonsillaris* has proved fatal by suffocation, little more than a highly inflamed state of the parts affected, with some morbid phenomena in the head, have been observed on dissection.

In the treatment of this complaint, our first and chief endeavour should be to carry off the inflammation; for which reason an antiphlogistic plan must be pursued. If the inflammatory symptoms run high, the pulse be quick and hard, and the breathing somewhat difficult, twelve or fourteen ounces of blood (supposing the patient to be an adult) ought to be drawn from the jugular vein, in preference to the arm; but if they do not, it will be sufficient to draw blood by the application of several leeches under the ears, particularly on the side most affected. Drawing blood from the tonsils by internal scarifications, is likewise a powerful remedy in this species of quinsey, and when employed with freedom on its first appearance, will greatly tend to abate the inflammation, and prevent a suppuration from ensuing.

At the commencement of *cynanche tonsillaris*, and before the febrile symptoms are any way violent, the timely exhibition of an emetic often proves extremely useful, and now and then checks its complete formation.

To assist in removing the inflammatory diathesis, gentle evacuation from the intestines, by means of laxative medicines, should be advised occasionally. Saline cathartics, such as the *potassæ tartras*, *sodæ sulphas*, or *hydrargyri submurias* with *jalap*, may be most proper.

In those cases where the inflammation is considerable, the early application of a blister or cataplasm of mustard round the throat, or to the back of the neck, will most probably be attended with a good effect; but in slight cases it will be sufficient to have these parts rubbed twice or thrice a day with some stimulating embrocation, such as the *linimentum camphoræ vel ammoniæ*, putting a piece of flannel round them afterwards.

In this complaint it is found of service to wash the mouth and fauces frequently with mild astringent gargles * somewhat acidulated, and likewise to scrape and cleanse the tongue from the fur which is apt to collect on it. Gargles composed of a few grains of the plumbi acetas have sometimes proved highly serviceable in abating the inflammation, when other remedies have failed ; but, from the general prejudice against the use of this preparation in the form of gargle, lest any of it should happen to be swallowed, it is seldom prescribed.

When white sloughy specks are observed on the tonsils, we may substitute the gargles advised in cynanche maligna for those mentioned here. If a tendency to gangrene should appear, we should immediately have recourse to those of an antiseptic nature, the best of which are composed of cinchona bark, myrrh, and Port wine, or of capsicum and vinegar.—See Cynanche Maligna.

Gargling is the best mode of washing the internal fauces ; but its motion is sometimes so painful or irksome, as to prevent the patient from having recourse to it. In such cases, the medicine may be thrown into the fauces by means of a syringe.

Frequently inhaling the vapour arising from warm water, mixed with a little vinegar, throughout the course of the day, will greatly assist the effects of gargles : and where Mudge's inhaler cannot be procured for the purpose, we must be content to substitute a basin with an inverted funnel over it.

When a febrile disposition prevails, it will be proper to employ diaphoretic medicines, with the view of determining to the surface of the body. Any of those advised under the head of Simple Continued Fever may be used ; and to increase their effect, the patient should take frequent small draughts of whey, barley-water, or any other diluting liquor. Neutral salts, as recommended under

* 1. R Confect. Ros. Gallic. ʒj.

Aq. Bullient. Oss.

Acid. Sulphuric. Dilut. f. ʒj. M.

ft. Gargarisma.

Vel,

2. R Decoct. Hordei, f. ʒvj.

Mel. Rosæ, f. ʒj.

Acid. Sulphuric. Dilut. ʒ xxx. M.

Vel,

3. R Aluminis Puri, ʒj.

Decoct. Hordei, Oss.

Mellis Rosæ, f. ʒj. M.

Vel,

4. R Infus. Rosæ Compos. f. ʒvj.

Tinct. Myrrh. f. ʒss.

Mellis Boracis, ʒiij. M.

* 1. Take Confection of the Red Rose, one ounce.

Boiling water, half a pint.

Diluted Sulphuric Acid, one drachm.

Mix them for a gargle.

Or,

2. Take Barley Water, six ounces.

Honey of Roses, one ounce.

Diluted Sulphuric Acid, forty-five drops.

Mix them.

Or,

3. Take Alum, one drachm.

Decoction of Barley, half a pint.

Honey of Roses, one ounce.

Mix them.

Or,

4. Take Compound Infusion of Roses, six ounces.

Tincture of Myrrh, half an ounce.

Honey of Borax, three drachms.

Mix them.

the same head, will likewise be proper medicines, and therefore the saline mixture, combined with tartarized antimony, will answer the purpose.

Where the symptoms run high, the patient ought to be confined to bed. Probably a pediluvium in the evening might have a good effect.

If our endeavours to resolve the inflammation have proved fruitless, and it seems likely to terminate in a suppuration, we ought then to hasten it by the frequent application of warm fomentations and emollient poultices to the throat; and by directing the patient to receive the vapour arising from warm milk and water into the fauces several times a day, in the manner before recommended.

Warm gargles, composed of a decoction of figs and barley-water, may also be employed, and the best way of using them will be to permit as large a quantity as can conveniently be retained to lie on the part till it cools to the temperature of the mouth. When the matter is formed, if the tumour does not break readily, a lancet may be applied to it.

During this stage of the disease, the passages to the stomach and lungs are sometimes so closed by the size and pressure of the tumour, as to endanger the life of the patient, either by suffocation, or the want of nourishment. In the first case, recourse should be had in proper time to the operation of bronchotomy, in order to keep up respiration; and in the last, the strength must be supported by nutritive and mucilaginous clysters, consisting of animal broths, thick gruel, arrow-root, barley-water, or a solution of starch, which should be thrown up the intestines in a small quantity each time, as they will thereby be absorbed the more readily, and will not be so apt to pass off again, without affording any benefit.

Before we resort, however, to bronchotomy, it may be worthy of a trial to endeavour to break the tumour, either by exciting vomiting, or by making the patient receive, through an inhaler, the steams arising from warm water, to which a sufficient quantity of æther has been added. The stimulus will prove so great as to succeed in many cases, particularly where the suppuration is nearly completed.

In cynanche tonsillaris, every part of the antiphlogistic regimen is necessary, and should be more or less strictly enjoined according to the degree of general excitement. Even where this is not very considerable, all kinds of animal food and fermented liquors must be avoided, and the diet should be light and diluent, consisting of mild vegetable matters, such as roasted apples, boiled turnips, and subacid fruits. Any fresh exposure to cold, even in the slightest cases, ought carefully to be avoided, otherwise the disease may be lengthened out to a great degree, and perhaps terminate in pneumonia.

The tonsils sometimes become affected with permanent swelling

and induration in consequence of an attack of cynanche, giving a good deal of uneasiness to the patient. In some cases the complaint will yield to astringents; but when it does not, and impedes his respiration or deglutition, there can be no impropriety in removing the diseased parts by a piece of wire with a noose at the end of it, or even by a pair of scissars.

CYNANCHE PAROTIDÆA, OR THE MUMPS.

THIS disease chiefly affects children, but particularly among the lower class of people; is often epidemic, and manifestly contagious.

It is distinguished by an external movable swelling that arises most commonly on both sides of the neck, but in some instances it is confined to one. These tumours occupy the maxillary and parotid glands; are large, hard, and somewhat painful; and sometimes they attain to such a considerable size, as greatly to impede the powers of respiration and deglutition, giving rise thereby to pyrexia. The swelling usually continues to increase till the fourth day; but from that period it declines, and in a few days more goes off entirely, and then the febrile disposition likewise ceases. As the swelling of the fauces subsides, it not unfrequently happens that tumours affect the testicles in the male sex, or the breasts in the female; but these generally go away in a few days. Sometimes the tumour in the fauces becomes suddenly suppressed, and is not accompanied with the last-mentioned symptom; or if so, this is quickly repressed; in which case the fever becomes very considerable, is attended with delirium, and at length proves fatal. In a few instances where the swelling has been very great, supuration has taken place in the cellular membrane, and occasioned prodigious deformity; or by bursting inwardly, and discharging its contents into the larynx, has suffocated the patient.

There is, however, seldom much danger from this disease, except when symptoms of congestion in the brain or its membranes arise.

The mumps do not often require the assistance of medicine; and all that is in general requisite is, to keep the head and face warm, to avoid taking cold, and to open the bowels by the mildest cooling laxatives; but should the tumour in the neck suddenly disappear, and the febrile symptoms increase, so as to induce an apprehension that the brain will be affected, it will be advisable to promote and reproduce the swelling by warm fomentations and stimulating liniments*; and to obviate the fatal consequences

* 1. R Liniment. Ammonia Fort. f. ʒj.

Vel,

2. R Spirit. Camphoræ, f. ʒj.
Liquor. Ammonia Subcarbonat. f. ʒij.

Tinct. Cantharidis, f. ʒss. M.

ft. Linimentum.

* 1. Take Strong Liniment of Ammonia, one ounce.

Or,

2. Take Camphorated Spirit, one ounce.
Solution of Subcarbonate of Ammonia, two drachms.
Tincture of Spanish Fly, half a drachm.

Mix them for a Liniment.

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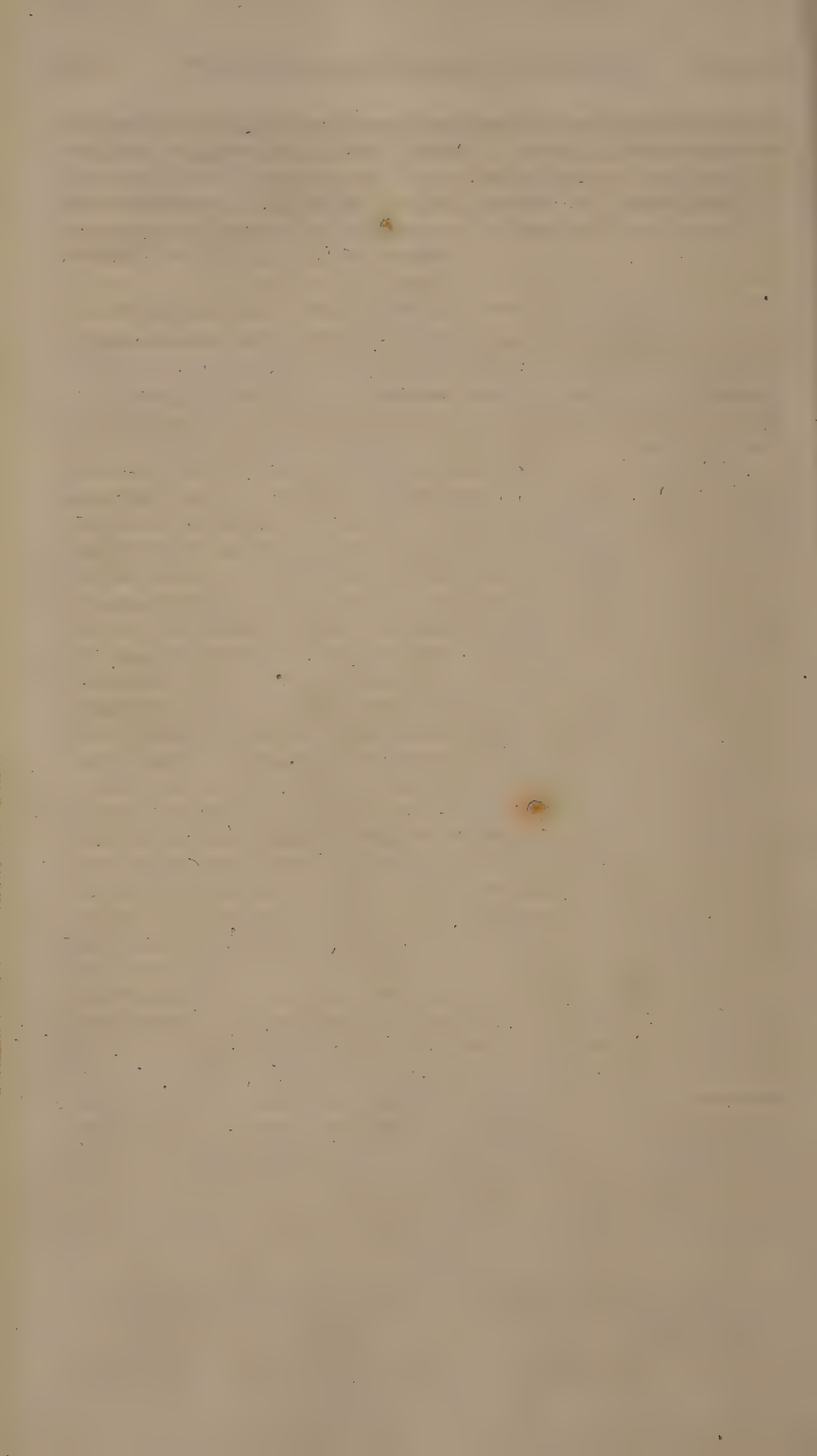
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... The ...



that might ensue from its suddenly receding, by means of venesection, nauseating doses of emetic medicines*, cathartics, and blisters, according to the violence of the disease.

When the testicles become affected and are much swelled, every endeavour should be exerted to prevent suppuration from ensuing, and we are therefore to have recourse to bleeding, both general and topical, cathartics, cooling and discutient applications, and a suspensory bag. Much the same means are to be adopted when, on a retrocession of the tumour in the neck, the female breast becomes indurated and swelled.

CYNANCHE MALIGNA, OR PUTRID SORE THROAT.

THE putrid sore throat is readily to be distinguished from the inflammatory quinsy by the soreness and white specks or aphthæ covering ulcers which appear in the fauces, together with the great debility of the system, a small fluttering pulse, and an eruption on the skin of the same nature with that of scarlatina, which are to be observed in the former; whereas in the latter there is always great difficulty of breathing, a considerable degree of tumour, with a tendency in the parts affected to suppurate, and a hard full pulse. Moreover, in the former disease the inflammation is seated principally in the mucous membrane of the mouth and throat, and the accompanying fever is of the typhoid type; whereas in the latter, it chiefly occupies the glandular parts, and the fever is of the inflammatory kind.

The putrid sore throat often arises from a peculiar or humid state of the atmosphere, and so becomes epidemical, making its attacks chiefly on children, and those of a weak lax habit, principally about autumn and the beginning of winter. It is produced likewise by contagion, as it is found to run through a family, when it has once seized any person in it: and it proves often fatal, particularly to those in an infantile state. In some instances the symptoms of scarlatina and cynanche maligna are so blended together, that it is difficult to say of which disease they partake most: in a practical view this is however of no importance, as both disorders require a similar treatment.

* 3. R Potassæ Nitræ. ʒj.
Antim. Tartarizat. gr. iss. M.

Et in chartulas vj. divid. quarum, unam dossem sumat 4tis horis.

Vel,

4. R Haust. Salin. f. ʒjss.

Vini Antimon. Tart. ℥ x.—xv.

Syrup. Cort. Aurant. ʒj.

ft. Haustus 3tia quaque hora capiendus.

* 3. Take Nitrate of Potass, one drachm.
Tartarized Antimony, one grain
and a half.

Mix them together, and divide them into six papers, of which one dose is to be taken every four hours.

Or,

4. Take Saline draught, one ounce and a half.

Wine of Tartarized Antimony, from fifteen to twenty-two drops.

Syrup of Orange Peel, one drachm.

Make them into a draught, which is to be taken every three hours.

By some physicians scarlatina anginosa and cynanche maligna have however been considered distinct in their nature; but from the observations which I have made, I am induced to look on them merely as modifications of the same disease; for I have noticed it under all its different forms in the same epidemic, and even in the same family from the same contagion.

The putrid sore throat sometimes attends on measles which are of a malignant nature.

Cynanche maligna usually makes its attack with cold shiverings, anxiety, nausea and vomiting, succeeded by heat, restlessness, thirst, debility, and oppression at the chest; the face looks flushed, the eyes are red, and a stiffness is perceived in the neck, with a hurried respiration, hoarseness of voice, and soreness in the throat; and upon viewing the internal fauces, there appears a fiery redness in every part, with some slight degree of swelling in the tonsils, which, however, is by no means so great as to impede either respiration or deglutition.

The inflammation, after a short time, takes a peculiar termination; for, upon a further inspection into the throat, a number of sloughs of a shade between a light ash colour and a dark brown are to be observed on the tonsils, velum pendulum palati, and uvula; the breath is highly offensive; the tongue is covered with a thick brown fur; and the inside of the lips is beset with vesicles, containing an acrid matter, which, falling on the corners of the mouth and other parts, occasions excoriations. With these symptoms there is likewise a coryza, which pours out a thin acrid matter, excoriating the nostrils. A purging often attends also, particularly in infants, and a thin acrid matter flows from the anus, excoriating this and the neighbouring parts.

From the first attack of the complaint there is a considerable degree of fever, with a small, frequent, and irregular pulse: and every evening there occurs a manifest exacerbation, and in the morning some slight remission, together with debility and general loss of strength. In some cases the brain is affected with delirium of the low muttering kind, or coma.

About the second or third day, large patches of a dark red colour make their appearance about the face and neck, which by degrees become dispersed over every part of the body, even to the extremities of the fingers, which feel swelled and stiff. These eruptions, after continuing for about four days, depart without producing any remission of the symptoms.

The inflammation, as in the cynanche tonsillaris, sometimes spreads along the Eustachian tube to the internal ear, occasioning ulceration, and sometimes wholly destroying its structure. In other cases it extends to the parotid, maxillary, and other glands of the fauces, which become swelled and painful. The whole neck, indeed, sometimes swells, and assumes a dark red colour.

As the sloughs spread, they generally become of a darker colour, the interstices at the same time assuming a purple hue;

new specks arise, and the whole internal fauces are at length covered with thick sloughs, which, when they fall off, discover ulcers sometimes very deeply seated.

In the worst cases, the fauces appear quite black, the sloughs corrode deeper and deeper, and spread throughout the whole of the alimentary tube, so as to terminate at last in gangrene; and the symptoms of irritation continuing to increase, together with a severe purging coming on, the patient is cut off; which event happens usually before the seventh day, and, in some cases, so early as on the third.

Where there is a great increase of the evening paroxysm of fever, with vast debility, depression, or irregularity in the pulse, early delirium, coma, much vomiting, diarrhœa or subsultus tendinum, and these are accompanied with considerable swelling of the throat, and dark-coloured spreading ulcers, with great fetor of breath, petechiæ, or hæmorrhage, the disease will certainly terminate fatally: but where the pulse becomes more moderate and stronger, the respiration freer, the skin soft and moist, the efflorescence copious on the surface of the body, the florid colour begins to return to the fauces, and a better matter to be discharged from the ulcers, with less acrimony in that which flows from the nares, we may expect a favourable termination. In slight cases, where the fever is of a less putrid nature, and the symptoms are moderate, and where the appearance of the efflorescence is succeeded by a remission, and this remission of the fever increases daily in the progress of the disease, we need not apprehend danger.

Cynanche maligna generally arrives at its height about the fifth or sixth day, and in cases which terminate favourably declines in five or six days. It has, however, been observed to run through its course more slowly in adults than in children. Twenty or thirty of the latter for one of the former are destroyed by this disease; owing most likely to their not being able to wash off the acrid ichorous matter from the throat and fauces by gargling as adults do, and which, by passing down the œsophagus, produces affections of the stomach and bowels, as likewise excoriations about the anus.

It sometimes happens that cynanche maligna appears without any affection or efflorescence of the skin, in the same manner as we meet with scarlatina without any ulceration in the throat: in general, however, the affections of the throat and skin are combined, and seem wonderfully influenced by the state of each other. But while the absence of the sore throat in scarlatina always denotes a favourable prognosis, that of the eruption in cynanche maligna generally affords an unfavourable one.

The eruption in cynanche maligna is seldom uniformly diffused, but comes out in blotches or small points scattered over the trunk and extremities, which are rarely of a florid red, but of a dark purplish or livid hue, and which terminate in but a very scanty

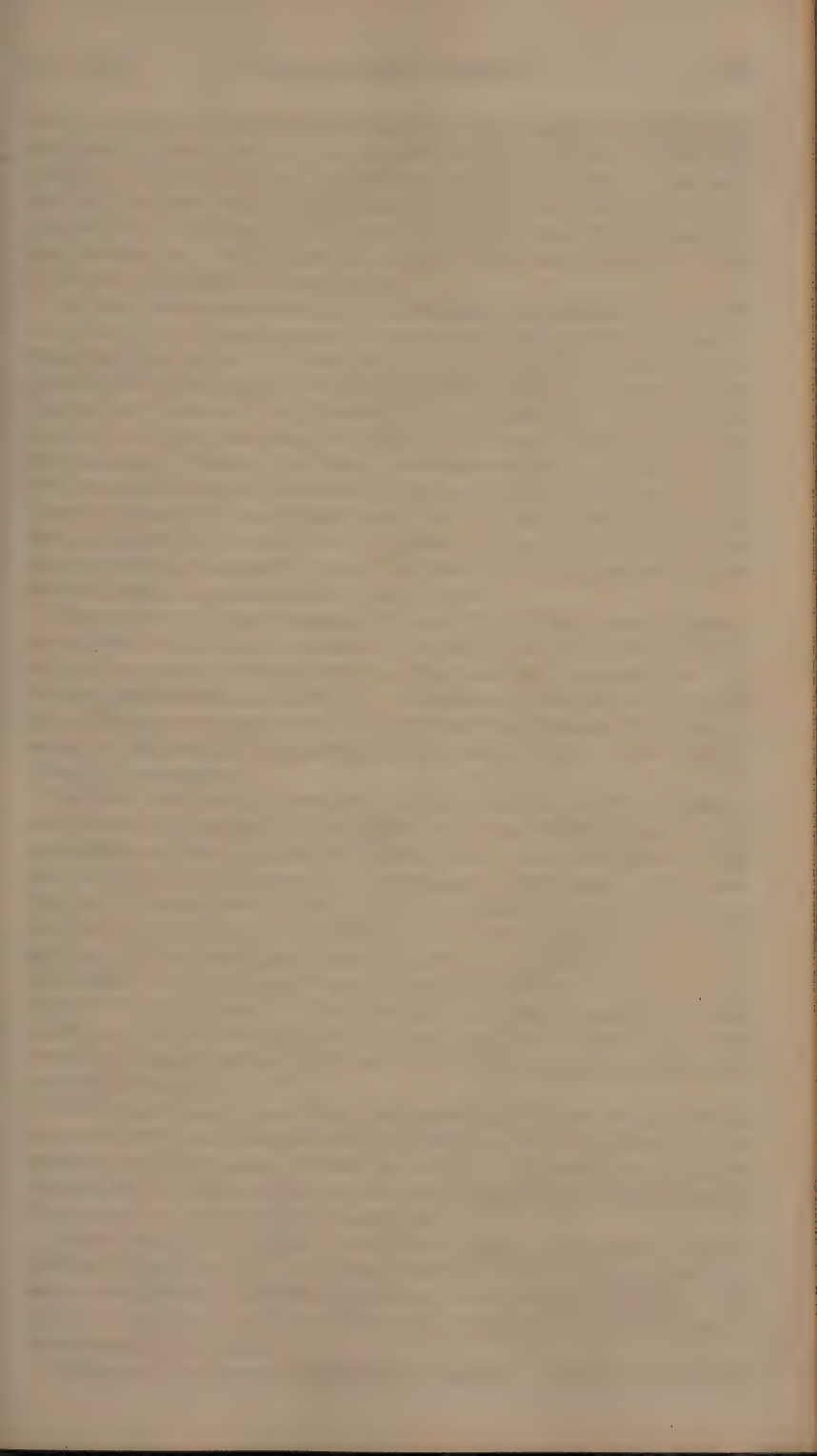
desquamation. As in other eruptive fevers, the eruption in this sometimes suddenly recedes, and an alarming train of symptoms arise. The patient becomes dropsical, the countenance assumes a cadaverous appearance, and convulsions supervene, which terminate in death. The same consequence has ensued on the eruption suddenly assuming a very pale or livid appearance. A florid colour of the eruption, with a uniform diffusion of it over the body, and a copious desquamation, afford a favourable prognosis.

From dissections, it appears, that in this disease the fauces are inflamed, suppurated, and often gangrenous; and that the trachea and larynx are likewise in a state of inflammation, and lined with a viscid fetid matter. In many instances the inflammatory affection extends to the lungs themselves. Large swellings of the lymphatic glands about the neck, occasioned by an absorption of the acrid matter poured out in the fauces, are now and then to be found. The same morbid appearances which are to be met with in typhus gravior present themselves in other parts of the body.

Cynanche maligna, as it differs very much in its nature and appearance from cynanche tonsillaris, differs also very much in its treatment; and this difference depends upon the former being attended with a fever of the typhoid nature, and a strong disposition to gangrene in the ulcerated parts, which prohibit the employment of those antiphlogistic remedies which we find proper and necessary in the latter, and call for others of a very opposite nature.

In the treatment of cynanche maligna, we should abstain from all kinds of bleeding, either topical or general, as it would infallibly prove injurious, by increasing the irritability, and likewise the debility, which naturally are very great. The same precaution is necessary with respect to the employment of active purgatives; and we are sufficiently deterred indeed from the use of them, by observing that a diarrhœa, arising even spontaneously, always does harm, and often proves fatal. The regular expulsion of the fæces is therefore to be solicited by gentle aperients and clysters, and even these are only to be had recourse to when nature is defective. It has often happened in this complaint, that from a want of due attention to this precaution, a cathartic has been followed by a retrocession of the eruption, and a train of the most alarming symptoms. If active cathartics are ever admissible in cynanche maligna, they can only be so at its very commencement, or at the termination of those cases, where, although there is a healthy appearance in the throat, with an abatement of all the febrile symptoms, still the abdomen becomes swelled from a collection of putrid colluvies; or glandular obstructions are formed. In such instances a few grains of hydrargyri submuriæ with rhubarb may be administered with caution.

It has been proposed by Dr. Currie to extinguish the disease in the beginning (as in the first twelve or sixteen hours of its attack)



by the copious affusion of cold water; and in some cases this plan may be adopted with success, equally as in scarlatina. After the affusion, it was Dr. Currie's practice to put the patient into bed, and to give him about eight ounces of wine, if an adult, and so in proportion to children; which plan, it appears, was very successful, for, in fifty out of fifty-two cases, where he had adopted it very early in the disease, he succeeded.

At the commencement of cynanche maligna it has been found of service to give a gentle emetic: wherefore a few grains of ipecacuanha may be taken. It will not fail to bring off a considerable quantity of acrid matter, which, by getting into the bowels, might induce a diarrhœa; an affection to be avoided by every possible means, as always adding to debility, and endangering the life of the patient. During the first four-and-twenty hours, an emetic will in some cases cut short the progress of the disease, and in all it will be likely to break the force of it. At an advanced stage of the disorder, if we still wish or think it proper to evacuate the contents of the stomach, it may be done by an infusion of chamomile flowers, in preference to ipecacuanha.

The grand objects to be kept in view in this malignant disease, should be, to check or counteract the septic tendency which prevails; to wash off from time to time the acrid matter from the fauces, and to obviate debility. Should any particular symptoms arise during its progress which may tend to aggravate the disease, such as diarrhœa, hæmorrhage, &c., they ought to be immediately attended to.

In the year 1785, at which period I was in the West Indies, this disease prevailed in the island of Saint Christopher's, as a universal epidemic among children; and a vast number of them fell martyrs to it, in spite of the utmost endeavours of the profession to save them; when at last the most happy effects were derived from the use of a remedy, the basis of which was Cayenne pepper. The medicine was prepared by infusing two table-spoonsful of this pepper and a tea-spoonful of salt, in half a pint of boiling water, adding thereto the same quantity of warm vinegar. After standing for about an hour, the liquor was strained through a fine cloth, and two table-spoonsful were given every half hour.

The speedy and good effect produced by the use of this medicine in every case in which it was tried, evidently points out the utility of giving warm aromatics, which will bring on a timely separation of the sloughs, as well as other antiseptics, to correct the tendency in the parts to gangrene.

Since the period above mentioned, many practitioners in the United Kingdom have become vouchers for the very beneficial effects which were derived in various instances of cynanche maligna from this medicine. My own experience induces me to speak well of it also.

To assist the effect of the pepper remedy, it will be highly ad-

visible to give the bark of cinchona at the same time, in doses of from two scruples to a drachm, every two hours; and if the inflammatory symptoms do not run high, it may be mixed in a little Port wine. Should the stomach not be able to retain the powder, we may then substitute the extract or strong decoction or infusion of it, adding to each dose about two drachms of the tincture. If the least degree of diarrhœa is produced by the use of the bark, a few drops of the tincture of opium may be added to each dose.

With many children it may be impossible to prevail on them to take the cinchona bark in any form. In such cases it ought to be administered in a clyster. Two drachms of the fine powder may be given in four or five ounces of barley-water, every three or four hours, to young children; and about half an ounce, in a proportionate quantity of the liquid, to those of eight or ten years of age. Should the first clyster come away too soon, from five to ten or fifteen drops of the tincture of opium may be added to the subsequent ones. The extract of cinchona may be employed in the same way.

In cynanche maligna, a junction of the muriatic acid with the bark of cinchona, as advised under the head of Typhus Gravior, or of the oxygenated muriatic acid, as noticed under that of Scarlatina, will be very proper. Where we give these acids in considerable doses, it may be necessary to add a few drops of tinctura opii to each, in order to prevent any disagreeable effect on the stomach and bowels from ensuing.

To check the septic tendency in the parts, as well as to remove the acrid matter which is secreted, it will be necessary to wash out the fauces with some proper gargle *, making frequent use of the

* 5. R Mel. Rosæ, f. ʒj.

Decoct. Hordei, f. ʒx.

Tinct. Myrrh. f. ʒss.

Acet. Commun. f. ʒj. M.

ft. Gargarisma.

Vel,

6. R Decoct. Cinchonæ, f. ʒvj.

Acid. Muriat. f. ʒj.

Tinct. Cinnam. Compos. f. ʒss.

— Myrrh. f. ʒj. M.

Vel,

7. R Decoct. Hordei Compos. f. ʒxij. cui
inter coquendum adde

Rad. Contrajerv. Contus. ʒss.

Liquori colato admisce

Acid. Acetic. Dilut. f. ʒij.

Tinct. Myrrh. f. ʒj.

Mel. Rosæ, f. ʒss. M.

* 5. Take Honey of Roses, one ounce.

Decoction of Barley, ten ounces.

Tincture of Myrrh, half an ounce.

Vinegar, one ounce.

Mix these for a gargle.

Or,

6. Take Decoction of Peruvian Bark, six
ounces.

Muriatic Acid, one drachm.

Compound Tincture of Cinnamon,
half an ounce.

Tincture of Myrrh, one ounce.

Mix them.

Or,

7. Take Compound Decoction of Barley,
twelve ounces.

Add, during its boiling,

Bruised Contrajerva Root, half an
ounce.

To the strained liquor, add

Diluted Acetic Acid, two ounces.

Tincture of Myrrh, one ounce.

Honey of Roses, half an ounce.

Mix them.

pepper remedy in the same manner; but as young children cannot be prevailed on to gargle, it ought to be injected into the mouth and throat with a syringe. After washing the parts in this manner, the steams arising from warm vinegar and water may be received into the fauces by means of an inhaler. Oxygen gas may also be inhaled by adults.

Where there is any difficulty in inducing the patient to sit up in bed to inhale this gas, or we are not furnished with the necessary apparatus, we may substitute the following method, which perhaps may answer equally well. Cause the windows and doors of the person's apartment to be closed, and then taking a chaffing dish with some live coals, throw into it half an ounce of purified nitre in powder, which will fill the room with a thick white cloud, that will continue for a considerable time. This process ought frequently to be repeated in the course of the day.

Many judicious practitioners have thought that the greater fatality among children than adults, in such as have laboured under cynanche maligna, is in a great measure to be attributed to their swallowing the morbid secretion from the throat. This, beyond all doubt, induces vomiting, griping pains, and a purging of the worst kind, by causing the complaint to spread along the alimentary tube; and it is very frequently by these affections that children are destroyed. Possibly they might be prevented by removing the acrid matter from time to time by a small sponge fastened to the end of a quill or piece of wood; and by means of another sponge at the other end, the ulcerated fauces may be touched with the remedies best calculated to promote their healing. This mode of proceeding will be the more necessary when gargling is not freely employed.

No force whatever is to be used for occasioning a separation of the sloughs; and if, after a continuation of the gargles for some time, the sloughs should not begin to separate, all that can be done with safety is to touch them with a little alum, or the muriatic acid mixed with honey, &c., applied with a small piece of soft rag, or hair pencil.

When any considerable degree of fever attends, and the skin is very dry, it may be advisable to give small and frequently repeated doses of some diaphoretic medicine; but as antimonials are apt to act downwards, and produce a purging, some caution will be necessary in administering them. To prevent this tendency, they may be combined with a small quantity of the aro-

Vel,

8. R Extract. Cinchon. ʒj.

Vini Rubr. Generos. f. ʒvj.

Acid. Sulphur. Dilut. ʒj. M.

Or,

6. Take Extract of Peruvian Bark, one drachm.

Port Wine, six ounces.

Diluted Sulphuric Acid, one drachm.

Mix them.

matic confection*. Small doses of the pulv. ipecac. comp. will however be preferable to any antimonial. They may be given with the *mistura camphoræ*.

Where *cynanche maligna* is conjoined with *scarlatina*, we may probably employ a solution of *ammonia subcarbonas*, in the proportion of two drachms to five ounces of water, with some advantage; giving two tea-spoonsful every three or four hours, according to the urgency of the symptoms.

For the purpose of promoting perspiration, the *pediluvium* has frequently been used in this disease; but at an advanced stage its effects might be too debilitating; and at all periods, if the symptoms run high, the trouble attending its use would not be compensated by any good effect it might have. The *pediluvium* seems therefore advisable only in those cases where the efflorescence becomes very pale, or suddenly recedes.

Should a *diarrhœa* arise in the progress of the disease, immediate recourse must be had to some powerful astringent†, to which may be added a use of wine or brandy mulled up with spice. Every possible endeavour should be exerted to put an immediate stop to it, as in every period of the disease *diarrhœa* is a very dangerous symptom.

Violent vomiting arising in the course of *cynanche maligna* is to be appeased by the saline medicine in the effervescing state; by opiates joined with camphor, and by applying linen cloths wetted with *tinctura opii* to the region of the stomach.

It has been usual to apply blisters to the throat in this com-

* 9. R Pulv. Antimonial. gr. j.—ij.

Confect. Aromat. ʒss. M.
ft. Bolus, tertia hora sumendus.

Vel,

10. R Mistur. Camphoræ, f. ʒij.

Confect. Aromat. ʒss.

Vini Antimon. Tart. ℥ xxv.

Aq. Cinnam. ʒij. M. Capiat
cochl. magnum 3tia quaque hora.

Vel,

11. R Pulv. Ipecac. Comp. gr. ij.—vi.

† 12. R Confect. Aromat. ʒj.
Mistur. Cretæ, f. ʒij.
Aq. Cinnam. f. ʒijss.

Tinct. Opii, ℥ xx.—xxx.

— Catechu, f. ʒj. M.

ft. Mistura cujus sumat cochl. magna ij.
quartis horis.

* 9. Take Antimonial Powder, one grain to two grains.

Aromatic Confection, half a scruple.
Make them into a Bolus, to be taken every three hours.

Or,

10. Take Camphorated Mixture, two ounces.

Aromatic Confection, half a drachm.

Wine of Tartarized Antimony, forty drops.

Cinnamon Water, three ounces.

Of this mixture take a large spoonful every third hour.

Or,

11. Take of Compound Powder of Ipecacuanha, from three to six grains for a dose.

† 12. Take Aromatic Confection, one drachm.
Chalk Mixture, two ounces.

Cinnamon Water, two ounces and a half.

Tincture of Opium, from thirty to forty-five drops.

— Catechu, one drachm.

Shake them, and of the mixture give two large spoonfuls every four hours.

plaint, particularly when there is any considerable degree of tumor ; but they are attended with some danger, as in a few instances where blisters were applied I have observed white specks shortly to arise on the part, which, from the prevailing disposition to putrefaction, have soon degenerated into ulcerations, that have become gangrenous, and at length have destroyed the patient.

It may, however, be attended with a good effect to excite a slight degree of inflammation externally, by applying a cataplasm of mustard moistened with a small quantity of camphorated spirit, or by rubbing the parts with rubefacients, as in cynanche tonsillaris.

A suppression of urine sometimes arises in cynanche maligna, and then it is frequently a symptom of debility. In such cases the necessity of pushing as far as possible the invigorating plan is strongly indicated. Emollient fomentations, or cold applications over the region of the bladder, are the most advisable means for removing this affection ; and where the patient has been long costive, some mild clyster may be expedient. When the suppression continues obstinate, the assistance of a surgeon will be necessary to draw off the water with a catheter.

In the last or putrid stage of this complaint, it is not uncommon for a hæmorrhage to break forth from the nose, mouth, or ears, which never proving critical, but, on the contrary, threatening the greatest danger, ought always to be immediately stopped, if possible, by administering strong antiseptics internally, as advised under the head of Malignant Fever, and by the external application of tents dipped in some powerful styptic, such as a solution of cupri sulphas*.

Through the whole course of the disease the patient is to be supported with a sufficient quantity of liquid vegetable nutriment, such as gruel, barley-water, and preparations of tapioca, Indian arrow-root, rice, sago, and panado ; and his ordinary drink may consist of wine-whey, or Port wine negus acidulated with orange-juice, or some other acid, either vegetable or mineral.

The quantity of wine allowed must be in proportion to the age of the sick, the violence of the febrile symptoms, the degree of debility that exists, or the tendency that there is to putrescency.

The chamber should be kept sufficiently ventilated, and of a proper temperature, so as not to be too hot, nor at the same time to be so cool as to give any check to the perspiration or efflorescence ; and it may be sprinkled several times a day with warm vinegar in which rosemary or some other aromatic herb has been infused. The greatest cleanliness is moreover to be observed in

* 13. R Cupri Sulphat. ʒjss.

Aluminis, ʒss.

Aq. Puræ, f. ʒvij.

Alcohol. f. ʒj. M.

ft. Solutio.

* 13. Take Sulphate of Copper, one drachm and a half.

Alum, half a drachm.

Pure Water, seven ounces.

Alcohol, one ounce.

Mix them for a wash.

removing, as soon as possible, whatever is voided by stool; the patient's linen, as also that of his bed, ought frequently to be changed, and the mouth and throat be repeatedly washed and kept clean.

The putrid sore throat being highly contagious, especially among children, it will be prudent, on the first appearance of the disease, to separate the sick from the rest of the family: and in order to destroy the contagion, and render the attendants less susceptible of being infected, it may be advisable to fumigate with the nitric or muriatic acid gases, as advised under the head of Malignant Fever.

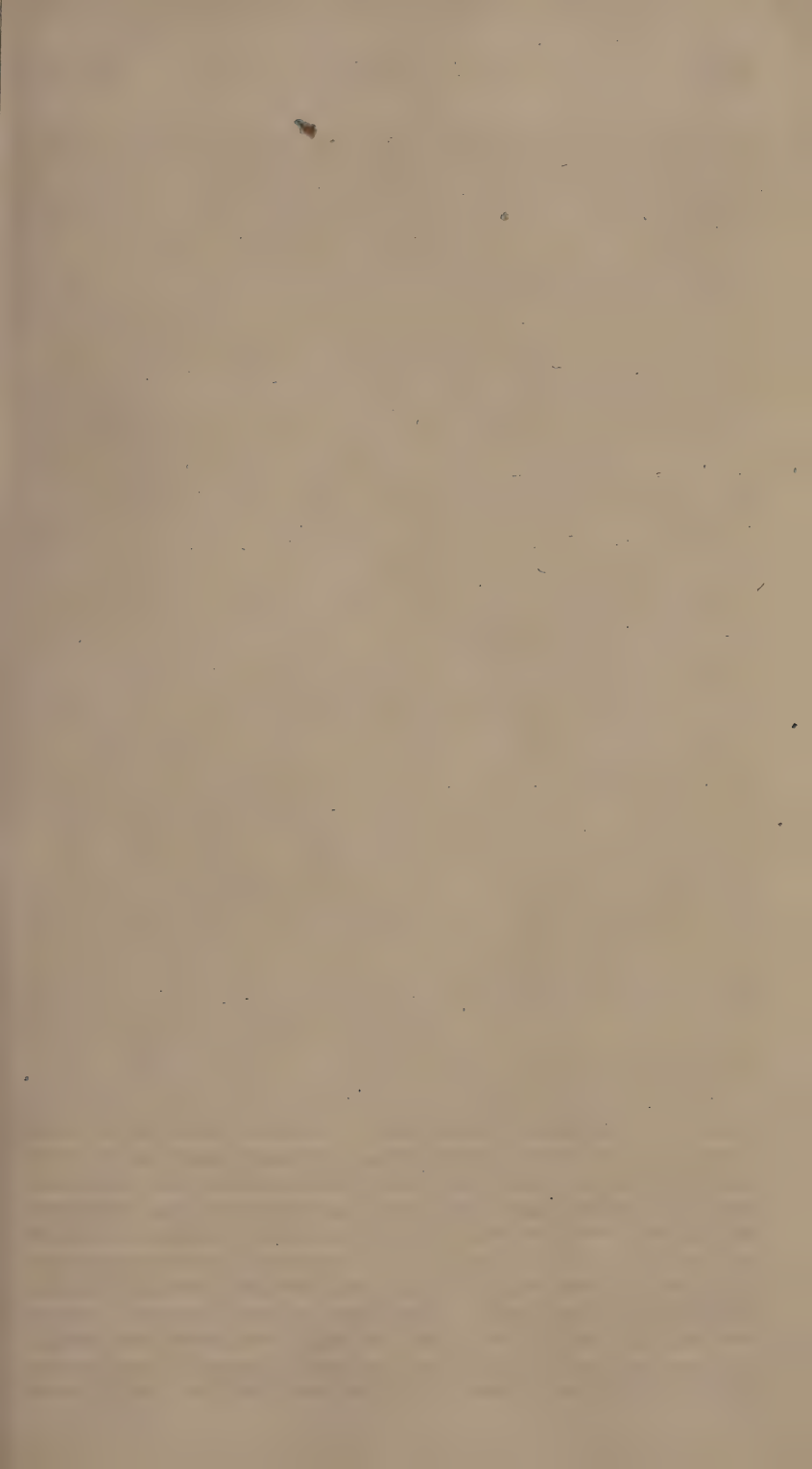
The capsicum medicine before mentioned has not only been used in the cure of cynanche maligna, but it has likewise been advised for the prevention of it. By giving the attendants of the sick, and others who may unavoidably be exposed to infection, a tea-spoonful or two every three hours, using it at the same time as a gargle, the preventive effect of the remedy is said to have proved certain. It seems to act by producing and keeping up a regular excitement in the tonsils, uvula, and fauces, and thereby enabling them to resist the sedative effects of the poison which is inhaled.

CYNANCHE TRACHEALIS, OR CROUP.

THE croup is an inflammatory affection of the mucous membrane of the trachea and larynx, excited so high as to stimulate the vessels to throw out coagulated lymph, instead of inducing only an increased and altered secretion, according to the customary action of those membranes. In many instances it extends even to the bronchial ramifications and surface of the lungs, producing an exudation that appears partly in a membranous coating, and partly in a fluid resembling pus, and is attended with a peculiar wheezing sonorous inspiration, compared by some to the crowing of a cock, a similar or stridulous sound in coughing and speaking, great difficulty of breathing, thirst, and other febrile symptoms, as likewise by some degree of spasmodic affection. Children are most liable to attacks of this disease.

Some physicians have judged it proper to divide croup into two species, viz. idiopathic, where the disease is primarily and extensively seated in the trachea, bronchiæ, and surface of the lungs; and symptomatic, where it appears as the consequence of some previous disorder, such as the measles, scarlatina, or cynanche maligna, for it has at times been found as the attendant of these complaints. The distinctions into spasmodic and inflammatory must be objected to, as the disease is always to be considered as arising from inflammation.

The croup may be distinguished from acute asthma by the following diagnostics:—in the former, the cough is frequently ringing in our ears, whereas in the latter there is little or no



cough. In croup there is seldom if ever any remission, whereas in the acute asthma it is one of the most striking phenomena of the disease, and it is attended with some evacuation, such as belching, vomiting, or purging. In croup, the pulse is strong, with much febrile heat, the urine high coloured, and the voice shrill and small: in acute asthma, the pulse, although perhaps equally quick, is less full, the urine is limpid, and the voice croaking and deep.

The inflammation in the croup appears of a very peculiar and singular nature. If it was like that met with in common, we might expect to find the same kind of concretion on the surface of the trachea every day, as its mucous membrane is so frequently the seat of inflammation, attended with an increased secretion. The matter, however, of which this substance is formed, possesses different properties from those of the mucus which is thrown out upon the membrane of the nose, or of the trachea, in common catarrhal affections. Most practitioners from thence have been induced to suppose, that the film which we find in the croup is not formed by a secretion from the mucous glands, but is an exudation from the exhalant arteries, and that it is analogous to the inflammatory exudation from the inflammation of other internal membranes, first described by the late Dr. Hunter. Upon this principle we can indeed more easily account for such a film not being found in common catarrhal affections, in which the mucous glands are, perhaps, more the seat of the disease. The opinion now universally entertained is, that the new membrane formed in croup is nothing but coagulated lymph.

The croup does not appear to be contagious, but it sometimes prevails epidemically. It seems, however, peculiar to some families; and a child having been once attacked, is very liable to its returns, at uncertain periods, from any slight exposure to cold; but then its attacks are usually less severe. It is likewise peculiar to children from the age of a year to eight or ten, particularly the ruddy and robust, and has rarely been known to attack a person arrived at the age of puberty.

The application of cold seems to be the general cause which produces this disorder, and therefore it occurs more frequently in the winter and spring, when the weather is stormy and blowing, than in the other seasons. It has been observed to be most prevalent near the sea-coast, where the air is loaded with moisture, and the changes of the weather are sensibly experienced; but it is frequently met with in inland situations, and particularly those which are marshy. It is less known in the temperate than in the northern regions of Europe.

A day or two previous to an attack of the disease, the child appears drowsy, inactive, and fretful; the eyes are somewhat suffused and heavy, and there is a cough, which from the first has a peculiar shrill sound: this, in the course of two days, becomes more violent and troublesome, and likewise more shrill. Every

fit of coughing agitates the patient very much; the face is flushed and swelled, the eyes are protuberant, a general tremor takes place, and there is a kind of convulsive endeavour to renew respiration at the close of each fit. As the disease advances, great difficulty of breathing prevails, accompanied with a swelling and inflammation in the tonsils, uvula, and velum pendulum palati, and the head is thrown back in the agony of attempting to escape suffocation. There is not only an unusual sound produced by the cough, but respiration is performed with a hissing noise, as if the trachea was closed up by some light spongy substance, and thought by some to resemble the sound of a piston forced up a dry pump, or the crowing of a cock. The cough is generally dry; but if any thing is spit up, it has either a purulent appearance, or seems to consist of films resembling portions of a membrane. Where great nausea and frequent retchings prevail, coagulated matter of the same nature is brought up. With these symptoms there is much thirst, an uneasy sense of heat over the whole body, a continual inclination to change from place to place, great restlessness, and frequency of the pulse. Very often the symptoms suffer considerable and sudden remissions and exacerbations.

In an advanced stage of the disease, respiration becomes more stridulous, and is performed with still greater difficulty and some degree of spasmodic affection, being repeated at longer periods, and with greater exertions, until at last it ceases entirely.

The croup is to be considered as a very dangerous disease, and which sometimes will destroy the child quickly by suffocation, induced either by spasm affecting the glottis, or by a quantity of matter blocking up the bronchiæ: but when it terminates in health, it is by a resolution of the inflammation, by a cessation of the spasms, by relief to the dyspnoea, and the voice becoming natural, with a copious and free expectoration of the matter exuding from the trachea, or of the membrane formed there. The unfavourable symptoms are, considerable difficulty of breathing, great anxiety, violent fever, frequent fits of coughing, no expectoration, the voice becoming more shrill, and the pulse irregular and intermitting.

The disease has, in a few instances, terminated fatally within twenty-four or thirty hours after its attack; but it more usually happens, that where it proves fatal, it runs on to the fourth or fifth day. Where portions of the membranous film, formed on the surface of the trachea, are thrown up, life is sometimes protracted for a day or two longer than would otherwise have happened. More than one half of the cases of croup terminate fatally. The younger the patient, the greater will be the danger.

On opening the bodies of children who have died of the croup, it is not unusual to find the lungs in a healthy state; but in some instances they are inflamed on particular points of their surface, and in others, adhesions to the pleura are discovered; oc-

casionally they are found full of dark-coloured blood and serum, and sometimes a quantity of pus is met with. In tracing the bronchiæ throughout their minute ramifications, they are usually found filled with mucus, but which is of a firmer consistence in the trachea, and, as it were, pasted on the surface of the tube, forming a membranous-like concretion, of variable colour and texture. The upper part of the trachea is the most usual seat of deviation from the natural structure; but this is sometimes observed also in the lungs, and extending to the smallest ramifications of the bronchiæ.

It has been, and I believe still is, in a great measure the common opinion, that the inflammatory affection in croup is chiefly confined to the trachea and bronchiæ; but Dr. Baillie*, as well as Dr. Cheyne†, have asserted the contrary, and have given a minute account of several dissections of this disease, wherein the lungs were affected with deep-seated inflammation; and obvious from the firmness of these organs, from their not collapsing when the chest was exposed, and from a kind of purulent matter found within their cells.

From the appearances on dissection, and the symptoms which attend the disease, there can be no doubt but that it is an inflammatory affection of the mucous membrane of the trachea, larynx, and other parts immediately connected therewith, attended by a spasmodic contraction of the muscles in consequence thereof; the treatment ought therefore to be managed accordingly. Whenever the least change is perceived in the voice of children, although it may be doubtful whether the alteration is or is not the result of a different affection, the most scrupulous attention should be paid to the organs of respiration, that proper means of relief may be adopted without delay. In the first or incipient stage of croup, our best and most strenuous endeavours should be exerted to lessen the increased action which prevails all over the mucous membrane of the trachea, larynx, and bronchiæ; and therefore bleeding, emetics, purgatives, and blistering, are to be resorted to. The first thing to be done should be, to take away blood, either from the jugular vein or arm; but a preference is due to the former, proportioning the quantity to the age and habit of the child, and continuing it so as nearly to produce fainting, where the difficulty of breathing is great. Should the symptoms not mitigate from the bleeding, or should they return after a little time, more blood ought to be drawn from the arm, and afterwards if necessary, by applying several leeches immediately over the trachea; but previous general bleeding should never be omitted in any case. In those which are urgent, active depletion will be necessary.

The use of the lancet has indeed been deprecated by a few practitioners; and the *tinctura opii*, in doses proportionate to the

* See his *Morbid Anatomy*, p. 91.

† See *Pathology of the Membrane of the Larynx*, by J. Cheyne, M.D.

violence of the symptoms, recommended as being likely to give relief as speedily as venesection, or any other remedy. I think bleeding, both general and topical, with other antiphlogistic remedies, ought never to be neglected in the first stage of the disease.

The prompt abstraction of blood at the commencement of croup, in such a quantity as effectually to lower vascular action upon the tracheal surface before it has continued long enough to produce any exudation, or effusion of coagulated lymph, or whatever it may be that constitutes the adventitious membrane, is in my opinion the principal remedy from which any relief is to be derived; and it is only at this period, most probably, that bleeding can be useful.

Immediately after bleeding it will be proper to apply a large blister all across the throat from ear to ear, keeping up a discharging surface after it is removed, by dressing it with a little of the *ceratum sabinæ*.

Having adopted these steps, we ought to give a gentle emetic of *ipécacuanha*, or tartarized antimony, in a dose proportioned to the age of the child, so as to produce sufficient vomiting. Great relief will be afforded by the remedy, in consequence of a considerable quantity ofropy mucus being brought off.

In all cases of the croup the child should be kept nearly upright in bed, to guard against suffocation.

Throughout the whole course of the disease an antiphlogistic regimen will be necessary; and the body should be kept open by the frequent administration of some purgative. Brisk purgatives (in which the submuriate of mercury* may be an ingredient, when the bowels are inactive), are obviously proper. Their operation may be solicited by occasionally administering clysters.

To assist the expectoration, and promote a determination to the surface of the body, we may employ diaphoretics, such as a few drops of *vinum ipecac.*, or the wine of tartarized antimony. I usually give a preference to the latter, administered every two or three hours in such doses as to excite nausea. To increase the effect of this medicine, a warm bath of between 90 and 100 of Fahrenheit may be used. Possibly moderate doses of the *pulvis antimonialis*, combined with a small quantity of the submuriate of mercury, might prove very serviceable.

By promptly resorting to the means which have been pointed

* 1. R Hydrargyri Submur. gr. iij.

Pulv. Jalapæ, gr. iv.—viij. M.

ft. Pulvis catharticus.

Vel,

2. R Pulv. Rhei, gr. vj.

Hydrargyri Submur. gr. ij. M.

ft. Pulvis.

* 1. Take Submuriate of Mercury, three grains.

Powdered Jalap, from four to eight grains.

Mix these together for a purge.

Or,

2. Take Powdered Rhubarb, six grains.

Submuriate of Mercury, two grains.

Mix them.

out, the progress of croup may be frequently averted; but by neglecting these during the first day or two of the disease, and trusting to trifling remedies, thereby suffering the inflammatory action to proceed, the practitioner will be constrained to witness that distress and loss of his patient which promptitude and energy might have prevented; for I think the croup in its early stage is, generally speaking, as much under the control of early and copious bleeding, emetics, purgatives, and the other remedies prescribed, as most other inflammatory disorders.

In the course of the disease there is always a lodgment of lymph or mucus in the trachea, and therefore it will be advisable to excite vomiting* once or twice a day, in order that the effused fluid, or adventitious membrane formed thereby, may be dislodged if possible, and brought off.

Inhaling the vapour arising from warm water with a small addition of æther, may possibly prove a good auxiliary, both in lessening the violence of the spasms, and assisting expectoration.

Some cases of this disorder have been successfully treated with the digitalis†. In these the tincture was employed in the dose of five drops, repeated every four hours. Its good effects would appear to depend partly upon its operating quickly and powerfully on the arterial system, and thereby stopping the rapidity of the inflammatory symptoms, and partly on its allaying the spasmodic irritation. I have myself employed it in two or three cases of croup, and with much seeming advantage, but I always premised general as well as local bleedings.

After copious depletion, by bleeding both general and topical, vomiting, purging, and blisters, when the inflammatory symptoms have subsided, and the disease seems almost entirely spasmodic, we may venture to give a few drops of the tincture of opium every two or three hours, combined with the wine of ipecacuanha, or that of tartarized antimony, for the purpose of procuring rest and a remission of the spasms. Musk and assafoetida have been recommended as antispasmodics in this disease, but here they are not entitled to our confidence.

From the report of some authors we should be induced to suppose that the croup was a disease of long duration and easy management; as by one we are informed that mercury, employed so as to produce a salivation, effectually cures it: another is confident of the success of a lotion made with spiritus ætheris sulphurici compositus; and a third places his reliance on a decoction of seneka; but such is the celerity of the dangerous symptoms, that

† See Med. and Phys. Journ. vol. iv. p. 20.

* 3. R Antimon. Tartarizat. gr. ij.
Aq. Puræ, f. ℥ij.
Oxymel. Scillæ, f. ℥ss. M.
Capiat cochl. duo minima subinde ad vomitum
promovendum.

* 3. Take Tartarized Antimony, two grains.
Pure Water, two ounces.
Oxymel of Squill, half an ounce.
Mix them together, and give two tea-spoonsful
from time to time until vomiting is excited.

few practitioners have, I think, witnessed a recovery from the croup, where an extravasation of coagulable lymph within the trachea and bronchial tubes had taken place in a high degree.

In one or two mild cases of the disease, hydrargyri submuriæ has been indeed employed, on the recommendation of Dr. Rush, with some seeming advantage; but as the relief we obtain is always in proportion to the quantity of mucus brought up, it would appear that we should never neglect exciting frequent vomiting, by means of *tinctura scillæ*, *vin. ipecacuanhæ*, or wine of tartarized antimony, in order to have recourse to mercury.

Dr. Hamilton, Professor of Midwifery in the University of Edinburgh, is a strong advocate for the use of the submuriate of mercury in the croup. He tells us*, that in every case where he has administered it previous to the occurrence of lividness of the lips and other mortal symptoms, he has completely succeeded in curing the disease. His mode of employing it is, having previously put the child into a tub of water heated to the ninety-sixth degree of Fahrenheit's thermometer, or wrapt it up in a blanket wrung out of hot water, to give it a dose of from one to five grains, according to the age, every hour, till the breathing is evidently relieved; when it is gradually discontinued, allowing at first two, then three, and finally four or five hours to intervene between each dose, according to the state of the symptoms.

The submuriate of mercury, in moderate doses, may be a good remedy in the croup, and by establishing its mercurial influence, may possibly supplant that of the disease; but the Professor's mode of using it to the exclusion of other remedies, such as bleeding, both generally and topically, emetics, &c. (with which it is not incompatible), I cannot recommend.

Where the child is threatened with suffocation, it will be right to excite sneezing by introducing strong snuff, or the *pulvis asari compositus*, up the nostrils by means of a quill; as also to excite vomiting by the wine of tartarized antimony, sulphate of zinc or copper, if it can swallow: if not, the fluid may be injected into the stomach by means of Mr. Jukes's apparatus, as mentioned under the head of Vegetable Poisons.

The operation of laryngotomy has been proposed as a last resource in those cases which threaten suffocation: but from the appearances on dissection, it does not seem that success would attend it; for although the upper part of the hardened membranous substance might be extracted by the forceps, still we should not be able to remove the fluid portion which fills the lower part of the trachea and bronchiæ, and which is one of the chief obstacles to respiration.

* See his Treatise on the Management of Children in early Infancy.

CYNANCHE LARYNGÆA, OR INFLAMMATION OF THE LARYNX.

CYNANCHE laryngæa is of a local nature, is acute, and of short duration, and affects the mucous membrane of the epiglottis, or rima glottidis, or, probably, both of these parts, and in which there exists a high degree of inflammatory action, occasioning impeded deglutition, with difficult respiration. It is only of late that this fatal variety of sore throat has attracted the notice of practitioners, having commonly been confounded with croup. In many cases there may, indeed, arise some difficulty of forming a just diagnosis; but the following peculiarities will greatly assist us.

In cynanche laryngæa the symptoms are, an uneasy sensation in the larynx, difficult and painful deglutition, partial swelling of the fauces, a supervening and perpetually increasing difficulty of breathing, nearly amounting to a sense of suffocation, the voice being extremely hoarse, or reduced to a scarcely audible whisper, attended by inflammatory fever. In cynanche trachealis there is a difficulty of respiration without any swelling of the fauces, or painful deglutition; the expirations, especially in coughing, are very shrill, but the fever in this is also inflammatory.

The usual cause of cynanche laryngæa is exposure to cold, which excites an inflammatory determination to the membrane investing the larynx.

It comes on with chilliness, succeeded by heat and fever, which are soon followed with a hoarseness and indistinctness of voice, laborious respiration and pain, or, as it were, a stricture in the throat threatening suffocation; the pulse is quick and feeble, the eyes are suffused with blood, and somewhat protruding, the countenance has a livid or swollen appearance, the tongue is furred, the tonsils, uvula, and pharynx presenting a dark red appearance on inspection, and any attempt to swallow is succeeded by excruciating pain and difficulty. If the symptoms are not properly attended to, and subdued by an immediate adoption of active and proper means, the patient is destroyed by suffocation.

The morbid appearances to be observed on dissection of those who die of cynanche laryngæa are as follow. the mucous membrane investing the epiglottis and margin of the glottis is inflamed, serum is effused under it, or coagulable lymph on its external surface, by which the rima glottidis is narrowed, or actually closed. Sometimes there has been perceived an accumulation of mucus in the cells of the lungs, with a slight effusion of serum into their reticular texture. In some instances the pleura has been found partially adhered, with more fluid in the cavities than is natural.

To control and manage the disease with success, a timely and active employment of an appropriate treatment is obviously necessary, and this must be directed to the subduing the local inflammation as quickly as possible. In the first stage of the inflammation,

(or first four-and-twenty or thirty hours of its commencement,) when the patient feels uneasiness in the larynx, with difficult and painful deglutition, we should have recourse to copious blood-letting from the arm in a free stream, (such as from sixteen to twenty ounces, if an adult,) repeating the operation on the same day, and nearly to the amount of the same quantity, should the breathing and deglutition not be very considerably relieved. In children of an early age, it will be better to draw blood from the external jugular vein than from the arm; but in adults and others, blood-letting from the arm is to be promptly and boldly employed, repeating the operation as circumstances may require. After bleeding, some active purgative, such as the submuriate of mercury, joined with jalap, or the compound extract of colocynth, ought promptly to be administered; and should it not act quickly and satisfactorily, a cathartic clyster may be injected. The bleeding, as also the purgative, may be repeated the succeeding day, if judged necessary; between the doses of which we may prescribe small and frequently repeated nauseating doses of some antimonial preparation, such as the pulvis antimonialis, or solution of the antimonium tartarizatum, which may be given in combination with a saline mixture and nitrate of potass. Antimonials are valuable medicines in cynanche laryngæa and acute bronchitis, for they not only lessen febrile excitement, by exciting nausea and opening the pores of the skin, but, by their action on the exhalant vessels of the lungs, they promote expectoration, and thus lessen the inflammation of the mucous membrane.

Should the inflammatory action in the parts not be subdued by venesection and purging, we may advise the application of several leeches to the throat, and a large blister to be put on the chest, immediately under the throat. In addition to these means, the frequent use of an inhaler, filled with warm water and vinegar, may afford some relief, as may also gargling. As an auxiliary, we may likewise recommend the semicupium.

Now and then suppuration takes place, and a copious discharge of matter is thrown up by a violent fit of coughing, produced by an effort at deglutition. Where suppuration exists, it might be advisable to excite vomiting, that the abscess may be ruptured, and the matter discharged by the mouth as expeditiously as possible, and thereby prevent suffocation.—See Croup.

Where the disease resists our best endeavours, laryngotomy affords the only chance of escape from suffocation, by enabling the patient to breathe, till the inflammation, narrowing the aperture of the glottis, may have time to subside; but this operation should not be delayed too long, as, at a late period, it may afford but little relief; whereas, when performed in an early stage of the complaint, the benefit to be derived from it will be of high importance.

Mr. Bell has lately endeavoured to simplify and improve the operation of laryngotomy. He recommends the incision to be made with a small scalpel through the membranous space betwixt

the thyroid and crycoid cartilages, then to introduce the handle of the knife, and turn it so as to open the slit. This will be sufficient if the occasion be temporary; but if a more permanent gap be required, the four corners left by the incisions may be snipt off*.

CYNANCHE PHARYNGÆA, OR INFLAMMATION OF THE PHARYNX.

THIS differs from cynanche tonsillaris only in the seat of the inflammation.

It is of the same nature, is produced by the same causes, and requires a similar treatment.

PLEURITIS, OR PLEURISY.

PLEURISY is an inflammation of the membrane lining and enveloping the lungs, attended with an acute pain in the side, impeded respiration, fever, and a full, quick, and hard pulse. In some instances the inflammation is partial, or affects one place in particular, which is commonly on the right side; but in general a morbid affection is communicated throughout its whole extent.

The disease is occasioned by exposure to cold, and by all the causes which usually give rise to other inflammatory complaints; and it attacks chiefly those of a vigorous constitution and plethoric habit. In consequence of the previous inflammation, it is apt, at its departure, to leave behind a thickening of the pleura, or adhesions to the ribs, and intercostal muscles, which either lay the foundation of future pneumonic complaints, or render the patient more susceptible of the changes in the state of the atmosphere than before.

It comes on with an acute pain in the side, which is much aggravated on making a full inspiration, and is accompanied by flushing in the face, increased heat over the whole body, rigors, difficulty of lying on the side affected, together with a cough and nausea; and the pulse is hard, strong, and frequent, and vibrates under the finger when pressed upon, not unlike the tense string of a musical instrument. If blood is drawn, and allowed to stand for a short time, it will exhibit a thick sisy or buffy coat on its surface, consisting of the coagulable lymph or fibrin.

If the disease is neglected at its onset, and the inflammation proceeds with great violence and rapidity, the lungs themselves become affected, the passage of the blood through them is stopped, and the patient is suffocated; or, from a combination

* See Surgical Observations, &c. part i. p. 46, by Mr. Charles Bell.

of the two affections, the inflammation proceeds on to suppuration, and an abscess is formed.

The prognostic in pleurisy must be drawn from the severity of the symptoms. If the fever and inflammation have run high, and the pain should cease suddenly, with a change of countenance and a sinking of the pulse, great danger may be apprehended; but if the heat and other febrile symptoms abate gradually, if respiration is performed with greater ease and less pain, and a free and copious expectoration ensues, a speedy recovery may be expected. Empyema, or a collection of pus in the cavity of the thorax, is occasionally one of the terminations of pleuritis.

The appearances on dissection are much the same as those mentioned under the head of Peripneumony; viz. an inflamed state of the pleura, connected with the lungs, having its surface crowded with red vessels, and a layer of coagulated lymph lying upon it; adhesions also of the substance of the lungs to the pleura. Besides these, the lungs themselves are often found in an inflamed state, with an extravasation either of blood or coagulated lymph in their substance. Tubercles and abscesses are likewise frequently met with.

In the treatment of pleurisy, our chief attention must be directed to the removal of the inflammation, by copious bleedings from the system at an early period of the complaint, taking the pulse for a guide, and giving the age and constitution of the patient proper consideration. While the pulse remains full, hard, and obstructed, the pain in the side acute, the breathing difficult, and the blood drawn off continues to exhibit a sizzly crust on its surface when cool, so long ought we to repeat the operation; with this exception, that after a free expectoration has commenced, it will be injurious.

Here it is proper to mention, that physicians have been struck at all times with the effect produced, by taking the blood from a large orifice* in inflammatory diseases; and it is certainly a step which cannot be too strongly urged, but more particularly in pleuritis and pneumonia. It is true, that from a small orifice an equal quantity of blood may be taken as from a large one; but the time of its flowing is so long, that the topical inflammation, which demands for its relief a sudden effect upon the system, is not much influenced by it, though the general strength is greatly reduced, which is an occurrence to be avoided as much as possible in a disease that requires a repetition of the operation.

Pleurisy and peripneumony are complaints in which an early and repeated application of the lancet is usually of the most urgent and indispensable necessity. If blood-letting be had recourse to at a proper period, and to a sufficient extent, (which, of course, must vary according to the symptoms of the disease, and the consti-

* See Dr. Fordyce's Fourth Dissertation on Fever, p. 50.

of the first illness, the patient is usually in a state of
 and is usually a female.
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 and is usually a female.

and repeated application of the agent is usually of the most
 very according to the symptoms of the disease, and the consti-

tutional habit and age of the patient,) it will seldom fail with very little further aid, to remove a disease that otherwise might, and not unfrequently does, in a very short time terminate in death.

From the well known power which the *digitalis* possesses of diminishing the action of the heart and arteries, it possibly may be employed in pleuritis with some advantage after copious general bleedings.

To allay the pain in the side, and take off the inflammation internally, it will likewise be advisable to apply a large blister immediately over the part affected; and to prevent the coming on of a strangury, the patient should be directed to drink plentifully of barley-water, in which a small quantity of gum. *acaciæ* has been dissolved. If it heals up too quickly, and the pain is not relieved by the first, a fresh one ought to be applied as near to the former as possible.

Where the pain is trifling, or the patient cannot be persuaded to submit to the application of a blister, flannel cloths, wrung out in a warm decoction of emollient herbs, or bladders containing warm water, may be applied in its stead.

In pleurisy the application of cold in or near the part affected, has occasionally been used with a salutary effect. Nitre, as being a powerful refrigerant, is likely to be a useful medicine in pleurisy as well as peripneumony. It may be given in doses of ten grains, repeated every three or four hours.

As strong purgatives are found to determine the flow of blood to internal parts, they are improper remedies to be used in pleurisy; and therefore, when it is found necessary to obviate costiveness on the first attack of the disease, it will be best to do it by means of gentle laxatives, such as the neutral salts and manna, in an infusion of senna, and the body may afterwards be kept open by aperient and emollient clysters, administered so as to procure one or two stools daily.

An early use of diaphoretics, particularly those of the antimonial class (as prescribed under the head of Simple Continued Fever), will be very proper in the cure of pleurisy; as they not only determine the circulation to the surface of the body, but will likewise greatly assist in promoting an expectoration. They ought, however, to be given in such small doses as not to excite vomiting (which might be attended with bad consequences), and to be repeated every two or three hours. To assist their operation, the patient should take frequent small draughts of some tepid liquor, such as barley-water, or herb-tea.

The pediluvium, or semicupium, frequently repeated, might prove a good auxiliary.

A free expectoration being the mean which nature usually adopts to relieve herself of this inflammation, it ought therefore to be encouraged by every possible method, such as inhaling the steams arising from warm water and milk, or from a decoction of

emollient herbs, and giving mucilaginous * and oily † medicines frequently throughout the course of the day, as here advised, or recommended under the head of Peripneumony. These will likewise serve to sheathe the throat, and other parts, from the acrimonious mucus which is thrown out, and which provokes frequent fits of coughing.

As opiates evidently tend to give a check to expectoration, they ought, if possible, to be avoided; but if it is absolutely necessary to have recourse to them, by the patient being exhausted from the want of sleep, they may then be given, joined with some diaphoretic ‡.

Throughout the whole course of the disease the patient is to abstain from animal food, and from all kinds of fermented and spirituous liquors, supporting his strength with gruel, sago, preparations of barley, and such like vegetable productions. On his recovery, he is carefully to guard against any fresh exposure

* 1. R Mucilag. Gum. Acaciæ, f. ʒiv.

Aq. Fontan. f. ʒij.

Potassæ Nitrat. ʒj.

Vini Antimon. Tart. ℥ xx.

Syrup Limon. f. ʒj. M.

ft. Mistura, cujus sumat paululum subinde, aut tussi urgente.

† 2. R Ol. Oliv. Optimi, f. ʒj.

Mucil. Cum. Acaciæ, f. ʒij.

Oxymel. Scillæ, f. ʒiij.

Ammonia Subcarbonat. ʒj.

Aq. Pulegii, f. ʒiv. M.

ft. Mistura.

Vel,

3. R Ol. Amygdal. Dulc. f. ʒj.

Syrup. Althææ, f. ʒss.

Mucilag. G. Acaciæ, f. ʒij.

Aq. Fontan. f. ʒiij.

Liquor. Ammon. Subcarb. f. ʒss. M.

ft. Mistura.

‡ 4. R Liquor. Ammon. Acetat. f. ʒss.

Aquæ Menth. Viridis, f. ʒj.

Vini Antimon. Tart. ℥ xiiij.

Spirit. Æther. Nitrici, ℥ xx.

Tinct. Opii, ℥ xxv.

Syrup. Simpl. ʒij, M.

ft. Haustus, hora decubitus sumendus.

* 1. Take Mucilage of Gum Acacia, four ounces.

Pure Water, two ounces.

Nitrate of Potass, one drachm.

Wine of Tartarized Antimony, thirty drops.

Syrup of Lemons, one ounce.

Of this mixture, when shaken, take a little from time to time, or when the cough is troublesome.

† 2. Take Best Olive Oil, one ounce.

Mucilage of Gum Acacia, two ounces.

Oxymel of Squill, three drachms.

Subcarbonate of Ammonia, one scruple.

Penny-royal Water, four ounces.

Mix them together, and take a little occasionally.

Or,

3. Take Oil of Sweet Almonds, one ounce.

Syrup of Marshmallows, half an ounce.

Mucilage of Gum Acacia, two ounces.

Pure Water, three ounces.

Solution of Subcarbonate of Ammonia, half a drachm.

Mix them.

‡ 4. Take Solution of Acetate of Ammonia, half an ounce.

Mint Water, one ounce.

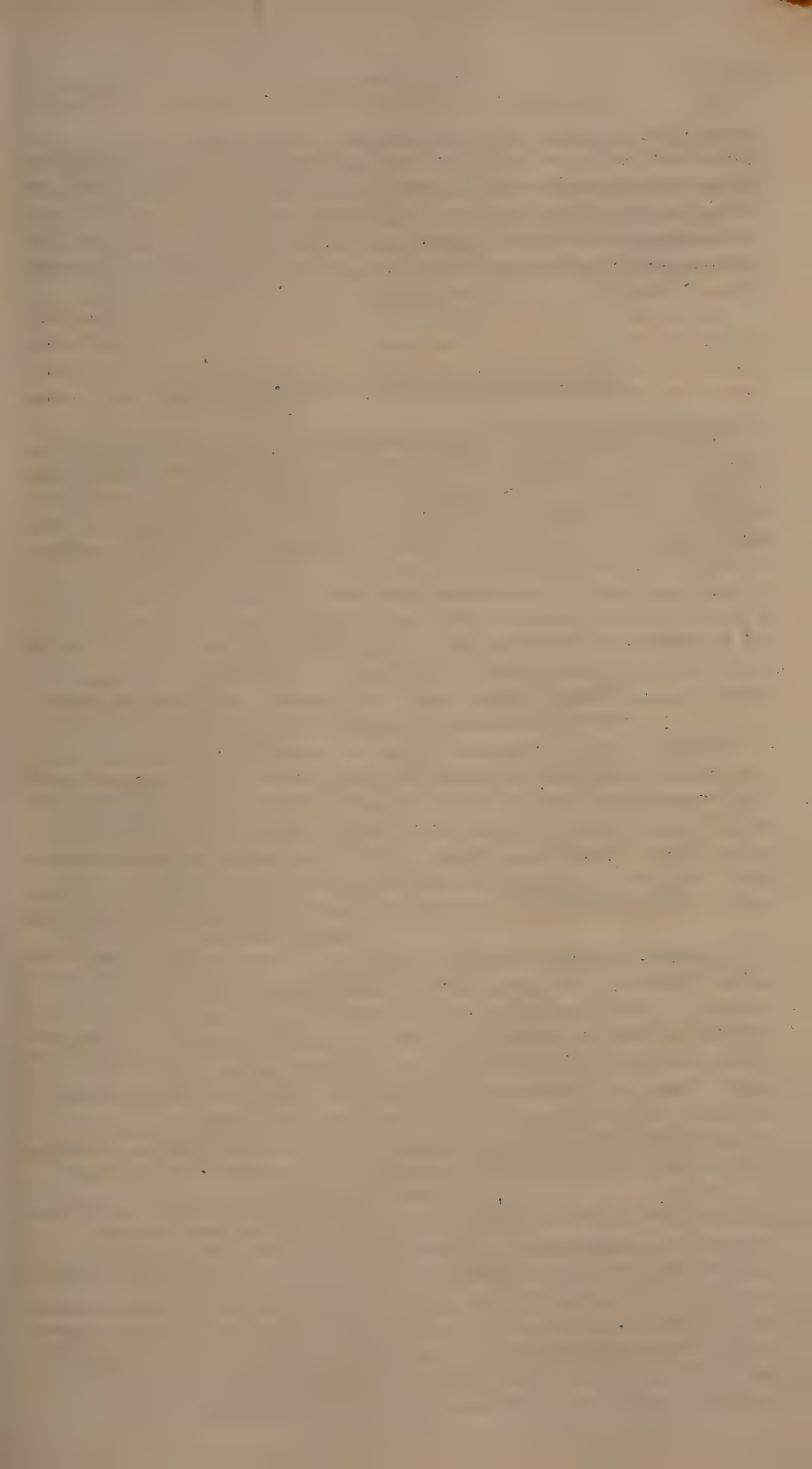
Wine of Tartarized Antimony, twenty drops.

Spirit of Nitric Æther, 30 drops.

Tincture of Opium, forty drops.

Common Syrup, two drachms.

Mix them for a draught, to be taken on going to bed.



to cold, as a return of the complaint might be attended with worse consequences than the first attack.

It has been mentioned that empyema, or a collection of pus, is one of the terminations of pleuritis: where this happens, and a fluctuation can be perceived, the thorax must be punctured to evacuate the matter. For the mode of performing the operation, see Bell's, or any other work on Surgery.

PNEUMONIA, OR PERIPNEUMONY.

A **PERIPNEUMONY**, or inflammation of the lungs, is denoted by a difficulty of breathing, obtuse pain in some part of the chest, cough, a frequent full pulse, vibrating under the finger like the tense string of a musical instrument, white tongue, high-coloured urine, and other symptoms of inflammatory fever. The disease is divided into the true and spurious peripneumony. When it arises from sily blood obstructing the vessels of the lungs, it is called by the former appellation; and when it proceeds from a thick viscid matter producing a similar effect, it is known by the name of the latter. Pneumonia is sometimes met with combined with typhus gravior, (viz. pneumonia typhodes,) and then appears under a different character from its usual one.

The most general cause of peripneumony is, the application of cold to the body, which gives a check to the perspiration, and determines a great flow of blood to the lungs. It attacks principally those of a robust constitution and plethoric habit; hence it is more frequently met with in men than women, and occurs most frequently in the winter season and spring of the year; but it may arise in either of the other seasons, when there are sudden vicissitudes from heat to cold.

Other causes, such as violent exertions in singing, speaking, or playing on wind instruments, by producing an increased action of the lungs, have been known to occasion peripneumony. Severe exercise, external injuries, a free indulgence in the use of fermented liquors, intemperance, repelled eruptions, suppressed evacuations, and metastasis from other diseases, such as gout, rheumatism, &c., may also give rise to it. Those who have laboured under a former attack of this complaint, are much predisposed to returns of it. Pneumonia appears as a symptomatic affection in several diseases, as measles, catarrh, &c.

The true peripneumony comes on with an obtuse pain in the chest or side, great difficulty of breathing, (particularly in a recumbent position, or when lying on the side affected,) together with a cough, dryness of the skin, heat, anxiety, flushing of the face, and thirst. The pain is prodigiously increased on coughing or making a full inspiration. At the first commencement of the disease, the pulse is usually full, strong, hard, and frequent; but in an advanced stage it is commonly weak, soft, and often irregular.

In the beginning the cough is frequently dry, and without expectoration: but in some cases it is moist even from the first; and the matter spit up is various both in colour and consistence, being often streaked with blood, but at which we need not be alarmed.

If relief is not afforded in time, and the inflammation proceeds with such violence as to endanger suffocation, the vessels of the neck will become turgid and swelled; the face will alter to a purple colour; an effusion of blood will take place into the cellular substance of the lungs, so as to impede the circulation through that organ, and the patient will soon be deprived of life.

Should these violent symptoms not arise, and the proper means for carrying off the inflammation have either been neglected, or have proved ineffectual, although adopted at an early period of the disease, a suppuration may ensue, which event may happen in a few cases during the first week, but more usually in the second, when the disease continues, and is to be known by frequent slight shiverings; by an abatement of the pain, and sense of fulness in the part; by the patient being able to lie with greatest ease on the side which was effected; by a remission of the previous febrile symptoms and accession of hectic, and by the respiration being less painful but more compressed. When the collection of matter has come to maturity, it sometimes bursts into the air-vessels, and occasions instant suffocation; in some cases it will be spit up. I have known patients spit up a considerable quantity in this way. This spitting often continues long, and the person falls into a state similar as in phthisis pulmonalis. Sometimes the collection bursts into the cavity of the thorax, and produces empyema—rather a hopeless case. Sometimes lymph is effused into the air-vessels, which, by filling up the cells of the lungs, produces suffocation; or being effused into the cavity of the chest, gives rise to hydrothorax; at others, adhesions to the ribs are formed.

Tubercles, or a hardened state of the lungs, have been said to occur in consequence of pneumonia, and in some cases it undoubtedly may be so, but not so often, I believe, as has been imagined. In my opinion, they are more frequently the cause of it, having previously existed in a scrofulous habit. In such cases they give great irritation to the lungs, produce dyspnœa, cough, and congestions, and upon the application of any additional stimulus, pneumonia is apt to be induced.

When peripneumony proves fatal, it is generally by an infusion of blood or lymph into the cellular texture of the lungs, so as to occasion suffocation, which usually happens between the third and seventh day: but it may likewise prove fatal, by terminating either in suppuration or gangrene. The latter is a very rare occurrence.

In those cases where it goes off by resolution, some very evident evacuation always attends it, such as a great flow of urine, with a copious sediment, diarrhœa, mild sweats diffused over the whole

In the beginning the world was

dark and void, and darkness

was upon the face of the deep.

And the Spirit of God

was hovering over the

water, and the Spirit

of God was saying, Let

there be light, and there

was light. And God

saw that the light was

good, and God separated

the light from the

darkness, and God called

the light Day, and the

darkness Night. And

the evening and the

morning were the first

day. And God said, Let

there be lights in the

firmament of the

firmament, to separate

the day from the night,

and let them be for

signs, and for seasons,

and for days, and for

years. And God made

two great lights, the

greater light to govern

the day, and the lesser

light to govern the

night, and God set

them in the firmament

of the firmament, to

give light upon the

earth, and God

called the greater

light Day, and the

body, or a hæmorrhage from the nose; but the evacuation which most frequently terminates the complaint, and which does it with the greatest effect, is a free and copious expectoration of a thick white or yellow mucus; and by this the disease is carried off in the course of twelve or fourteen days, the pulse gradually abating in its frequency, and the heat of the body, with the other febrile symptoms, disappearing. Cases of pneumonia terminating in health without a free expectoration are very rare.

Our opinion as to the event is to be drawn from the symptoms which are present. A high degree of fever, attended with delirium, much difficulty of breathing, acute pain, a dry cough, or an expectoration of a dark black colour, sudden cessation of pain or of the expectoration, followed by a change or lividness of the lips and of the countenance, and sinking or irregularity of the pulse, denote great danger: on the contrary, an abatement of the febrile symptoms, and of the difficulty of breathing, and pain taking place on the coming on of a free expectoration, or the happening of any other critical evacuation, such as a hæmorrhage from the nose, diarrhœa, or free diaphoresis, the urine at the same time depositing a copious sediment, promise fair for the recovery of the patient. When the inflammation terminates either in suppuration, or an effusion of lymph into the cellular substance of the lungs, or cavity of the thorax, it is always to be considered as highly dangerous.

On dissection the lungs usually appear inflamed, and there is often found an extravasation either of blood or of coagulated lymph in their cellular substance. The same appearances likewise present themselves in the cavity of the thorax, and within the pericardium. The pleura connected with the lungs is also in an inflamed state, having its surface every where crowded with red vessels. Besides these, abscesses are frequently found in the substance of the lungs, as likewise tubercles, and adhesions to the ribs are formed. A quantity of purulent matter is often discovered also in the bronchiæ.

As in many cases of peripneumony the patient is destroyed in the course of a few days by the passage of the blood through the lungs being obstructed, effusion taking place, hæmorrhage of blood ensuing, or the inflammation proceeding on rapidly to a suppuration, the antiphlogistic plan, in its most rigorous extent, ought to be adopted on the very first attack of the disease. A quantity of blood proportioned to the state of the pulse, the violence of the symptoms, and the vigour of the person, (for there is no fixing on the definite quantity,) should be drawn from the arm, taking care to make the orifice large (see Pleurisy); and if the difficulty of breathing and pain are not relieved while it flows, the bleeding should be continued until the patient turns pale and seems likely to faint, as one copious evacuation will be far preferable to repeated small bleedings.

It has often distressed me during the course of my practice,

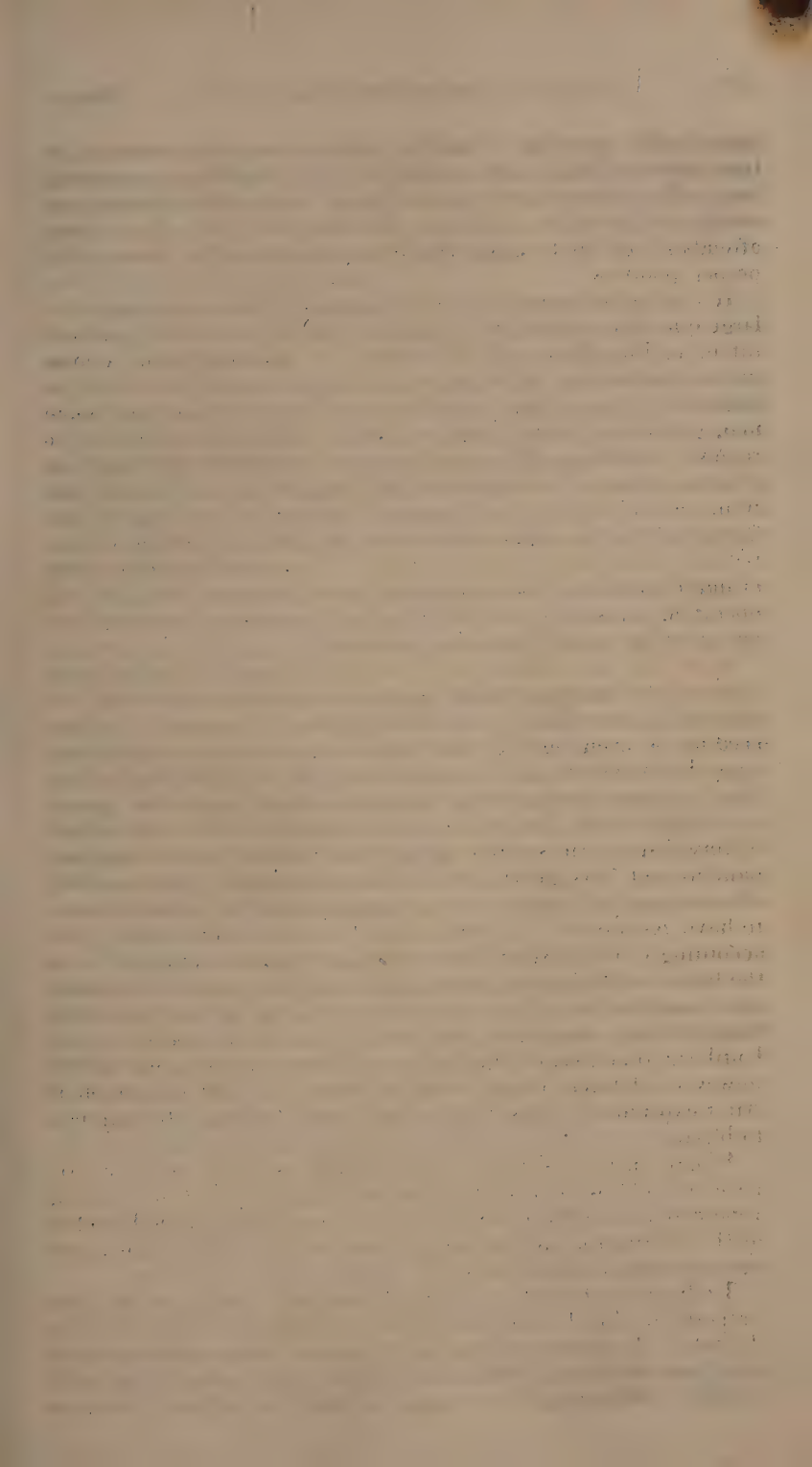
when called upon for advice in severe cases of pneumonia, to have observed many a life endangered, nay sometimes sacrificed, by a trifling abstraction of blood at the onset of the disease, and which most probably would not have happened had the medical attendant, on first seeing the patient, immediately drawn off a proper quantity.

If a powerful impression is produced by the abstraction of a large quantity at first, the disease is suddenly corrected, and will often, in the course of a few hours, be converted from a most violent pneumonia into a simple catarrh; or, if the result is not so fortunate, the symptoms will become infinitely milder and more manageable, and may even not recur with such violence as to require a repetition of venesection. But the reverse of this picture deserves notice. If blood-letting has been too long deferred, or, from timidity in the practitioner or the patient, not largely employed in the first instance, the disease generally proves violent, tedious, untractable, and often fatal. It appears to be a matter of indifference from which arm the blood is taken away, as the operation is resorted to with the view of removing a stimulus, and not any expectation of causing revulsion.

If the pain and difficulty of breathing continue violent, or return after a short interval, (which they are very apt to do when the loss of blood is only trifling,) the bleeding may be repeated the succeeding or even on the same day, and a proper quantity may again be drawn off, as the practitioner, in repeatedly abstracting blood, is not to be guided by the quantity, or even by the appearance of the blood, but by the relief procured. When the inflammatory disposition is subdued, and the difficulty of breathing and pain are not very great, (the patient complaining, perhaps, only of a rawness and soreness in the throat,) it will not be necessary to have recourse to the operation a second or third time. It is according to the state of the symptoms, the effect produced upon the heart and lungs, and respiration being freely performed, taking into consideration, at the same time, the appearance which the blood exhibits when cold, that bleeding is to be repeated or not. Until the functions of the heart and lungs are free, we should, however, detract blood, whether there be buff or not on it. After expectoration has freely taken place, it would be improper to bleed.

Where there has been a considerable lapse of time, and the patient is old, or in a weak debilitated state, instead of repeating venesection a second or third time, we may apply several leeches, or the scarificator and cupping-glasses to the chest, immediately over the part which is painful.

To diminish the action of the heart and arteries, it has been proposed in this disease, as well as in pleurisy, to administer the digitalis. In addition to early and copious bleeding, this remedy may probably have a good effect, but it ought never to be relied on alone. Where much systematic debility and pulmonic irritation



prevail, with frequent coughing, difficult respiration, dry, heated skin, and a rapid hard pulse, notwithstanding we have bled freely in the early stage of the disease, we may then give the foxglove, either in the form of powder or tincture. About half a grain of the former, or from fifteen to twenty drops of the latter, may be administered every four hours.

Inflaming the skin immediately over the part affected with pain, by the application of a large blister, is the next proper step to be adopted after bleeding; and should it shew a disposition to heal up soon, a fresh one ought to be applied in the vicinity of the other, so as to keep up a constant effect; which mode of proceeding will be far preferable to keeping the blistered parts open with any kind of stimulating ointment, as is often practised. Blisters may be used in any stage of the disease, and in many cases in which blood-letting cannot be carried far enough, or cannot be employed at all: in the peripneumonia notha of old people they prove very beneficial.

Emollient fomentations and cataplasms are sometimes made use of; but they evidently interfere with the application of a more powerful remedy, as a blister cannot be kept on at the same time that they are employed.

If the bowels require evacuation, strong purgatives ought not to be given, but gentle aperients of a cooling nature should be used, particularly at the commencement of the disease. It is a pretty general opinion that purgatives are not proper remedies in pneumonic affection, because copious and frequent purging has a tendency to diminish expectoration, a point of the highest importance: that drastic ones ought not to be administered, is obvious; but, nevertheless, we should not neglect giving those of a mild nature, such as a solution of the sulphate of magnesia, &c., as prescribed below*.

A free expectoration being the means which nature most usually adopts for carrying off the inflammation, we ought, therefore, to promote it as much as possible, by giving such medicines as are supposed to have a power of promoting a secretion from the glands of the throat and bronchiæ; and likewise such as will serve to alleviate the cough, by sheathing the parts against that acrimony of the mucus which gives rise to it. It may be at the option of the practitioner to use any of the forms mentioned below †, or to

- * 1. R Manna Optim. ʒij.
Magnesiæ Sulph. ʒij.

Infus. Sennæ Compos. f. ʒiss. M.

ft. Haustus catharticus.

Vel,

2. R Ol. Ricini, f. ʒi.

- † 3. R Cetacei, ʒij.

Vitell. Ovi, q. s. ad solut. et adde.

- * 1. Take Manna, three drachms.
Sulphate of Magnesia, two drachms.

Compound infusion of Senna,
one ounce and a half.

Mix them for an aperient draught.

Or,

2. Take Castor Oil, one ounce.

- † 3. Take Spermaceti, two drachms.

Yolk of Egg, a sufficiency for solution.

substitute those advised under the head of Pleurisy. To assist their effect, as well as to relax the vessels of the lungs, it will be right to recommend the steams arising from a warm infusion of emollient herbs, such as marshmallow, chamomile flowers, &c., with an addition of vinegar, to be inhaled repeatedly throughout the course of the day. Few auxiliary remedies have proved more efficacious in this disease than the steam of warm water impregnated with vinegar, and copiously inhaled by means of Dr. Mudge's machine.

A common objection made by patients to take medicines containing spermaceti, is, that in the usual way of preparing them the mixture is not smooth and uniform. It has been found, that by first melting the spermaceti, and pouring it into a mortar which had been previously warmed, then adding a sufficient quantity of the yolk of eggs, and afterwards the water, this inconvenience is entirely avoided, and that much less time is required than in the usual way of preparing it.

With the view of assisting expectoration and determining to the surface of the body, we may give antimonials in small nauseating doses, taking care, however, not to excite any vomiting.

Aq. Pulegii, f. \mathfrak{z} iv.
Potassæ Nitræ, \mathfrak{z} j.
Oxymel. Scillæ, f. \mathfrak{z} ij. M.

ft. Mistura.

Cochl. j. pro dos. subinde aut tussi urgente sumendum.

Vel,

4. R Mucilage. Gum. Acaciæ, f. \mathfrak{z} v.

Syrup. Limon. f. \mathfrak{z} j.
Tinct. Tolutan. f. \mathfrak{z} j.

— Camph. Comp. \mathfrak{z} ij. M.

ft. Mistura.

Vel,

5. R Gum. Ammon. \mathfrak{z} j. solve in

Aq. Puleg. f. \mathfrak{z} v. et adde

Acet. Scillæ, f. \mathfrak{z} ij.
Syrup. Tolutan. f. \mathfrak{z} ss. M.

ft. Mistura.

Vel,

6. R Ol. Amygdal. Dulc.
Syrup. Tolutan. aa f. \mathfrak{z} j.
Cetacei (Gum. Acac. permixt.) \mathfrak{z} j.

Confect. Rosæ Canin. \mathfrak{z} ss. M.

ft. Linctus, de quo sæpe lambat æger.

Then add

Penny-royal Water, four ounces.

Nitrate of Potass, one drachm.

Oxymel of Squill, three drachms.

Mix them, and let a spoonful be taken occasionally, or whenever the cough is troublesome.

Or,

4. Take Mucilage of Gum Acacia, five ounces.

Syrup of Lemons, one ounce.

Tincture of Balsam of Tolu, one drachm.

Compound Tincture of Camphor, three drachms.

Mix them.

Or,

5. Take Gum Ammoniac, one drachm.

Dissolve it in a mortar with

Penny-royal Water, five ounces.

Then add

Vinegar of Squill, three drachms.

Syrup of Tolu Balsam, half an ounce.

Mix them.

Or,

6. Take Oil of Almonds,

Syrup of Tolu, of each one ounce.

Spermaceti (mixed with Gum Acacia,) two drachms.

Confection of Dog Roses, half an ounce.

Make them into a linctus, of which let the patient take a little frequently.

With these medicines* it will be proper to direct the patient to take frequent small draughts of some mild diluent liquor, such as barley-water, or thin gruel, to which may be added a little lemon-juice, to give it a pleasing acidity.

Nitre, and some other neutral salts†, will likewise produce a good effect in peripneumony, as well as antimonials, and may therefore be given.

Making use of a pediluvium every evening might probably be attended with much benefit.

After a copious abstraction of blood at the commencement of the disease, it has been proposed by some practitioners to give antimonial powder, nitre, and calomel combined, every three hours or oftener; continuing the medicine assiduously until the constitutional effects of the mercury are evident, when the pulmonary symptoms, it is said, will usually give way. Of this practice I have had no experience, and can therefore form no decisive opinion as to its effects.

After the expectoration has appeared copiously, we should be cautious in promoting purging, as this, as well as blood-letting, would be likely to check it. At this period of the disease it will be right, however, to remove costiveness, by gentle aperients, assisted by clysters.

* 7. R Pulv. Antimonial. gr. iss.—gr. iij.

Confect. Rosæ, gr. x. M.
ft. Bolus, 3tiis horis sumendus.

Vel,

8. R Pulv. Jacob. Ver. gr. iv. pro dos.

Vel,

9. R Antimon. Tartarizat. gr. ij.

Aq. Fontan. f. 3vij.

Syrup. Rosæ, f. 3ij.

ft. Mist. cujus sumat cochl. magna ij. tertia vel quarta hora.

† 10. R Succ. Limon. f. 3jss.

Potassæ Subcarbonat. 3j.

Aq. Menthæ Virid. f. 3j.

— Fontan. f. 3ij.

Potassæ Nitr. 3j.

Syrup. Tolutan. f. 3ss. M.

ft. Mistura, cujus sumat cochl. iij. pro dos. quartis horis.

Vel,

11. R Liquor. Ammon. Acetat. f. 3ij.

Aq. Puræ, f. 3x.

Sp. Æther. Nitr. f. 3ss.

Vini Antimon. Tart. ℥xiv.

Syrup. Simpl. f. 3j. M.

ft. Haustus, quartis horis sumendus.

* 7. Take Antimonial Powder, one grain and a half to three grains.

Confection of Roses, ten grains.

Mix them into a bolus, to be taken every three hours.

Or,

8. Take James's Powder, four grains for a dose.

Or,

9. Take Tartarized Antimony, two grains.

Pure Water, seven ounces.

Syrup of Roses, two drachms.

Of this mixture, two table-spoonsful are to be taken every three or four hours.

† 10. Take Lemon Juice, one oz. and a half.

Subcarbonate of Potass, one drachm.

Mint Water, one ounce.

Pure Water, three ounces.

Nitrate of Potass, one drachm.

Syrup of Tolu, half an ounce.

Of this mixture the dose may be three table-spoonsful every four hours.

Or,

11. Take Solution of Acetate of Ammonia, three drachms.

Pure Water, ten drachms.

Spirit of Nitric Æther, half a drachm.

Wine of Tartarized Antimony, twenty-one drops.

Common Syrup, one drachm.

Mix them for a draught, to be taken every four hours.

At the commencement of pneumonic inflammation opiates would evidently prove injurious by interrupting expectoration, and therefore they should not be prescribed in this stage of the disease; at least, until previous bleeding and blistering have greatly relieved the difficulty of breathing and pain. In a more advanced stage of peripneumony, where a cough is the only urgent symptom, and proves the chief cause either of the continuance of the pain, or of the want of sleep, opiates will be highly useful, and may therefore be given, combined with the pectoral medicines before advised, or in the form of a draught* to be taken about bed-time.

In pneumonia, where the patient has become much exhausted from the effects of the disease, and bleeding has been carried to the full extent that the safety of the patient will admit of, the Prussic acid may be productive of very good effects; the pulse will be lowered, and totally changed as to character, and the cough much relieved†. For the mode of administering it, see Phthisis.

During the whole of the complaint the patient should be confined to bed, lying with his head and shoulders as much elevated as possible: his chamber is to be kept of a proper temperature, neither below 50 nor above 60 degrees of heat, and his strength supported with food of a light nutritive nature, such as roasted or boiled apples, panado, &c. His drink should be thin gruel and barley-water, sweetened with honey, or a decoction of liquorice, in which a small portion of currant jelly is dissolved, to give it a pleasing tartness. On recovering, he should carefully guard against any exposure to cold, or any irregularity which might occasion a relapse; for no inflammation is so apt to recur as the pneumonic, and a return of it might lay the foundation of phthisis pulmonalis.

If, in consequence of the violence of the disease, an effusion of lymph takes place, and hydrothorax ensues, the means advised under this head must be employed. If suppuration or empyema is the termination, and we cannot evacuate the matter in any other way than by having recourse to the operation of paracentesis, this should be performed in due time. It is stated in a late Number (viz. 280) of the Medical and Physical Journal, by a practitioner of respectability, that he has discovered a means whereby it may be ascertained to a certainty when the inflammatory stage has ceased, and the purulent commenced; which is as follows: Place

† See Observations on the Internal Use of Prussic Acid in Pulmonary Diseases, by A. B. Granville, M.D.

* 12. R Liquor. Ammon. Acetat. f. ʒiij.

Aquæ Menth. Virid. f. ʒj.

Tinct. Opii, ℥xxvij.

Syrup. Tolutan. f. ʒij.

Vini Antimon. Tartarizat. ℥xij. M.

ft. Haustus.

* 12. Take Solution of Acetate of Ammonia, three drachms.

Mint of Water, one ounce.

Tincture of Opium, forty drops.

Syrup of Tolu, two drachms.

Wine of Tartarized Antimony, eighteen drops.

Mix them for a draught.

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a hand upon each side of the chest, and at the same time direct the patient to articulate. If the inflammatory stage is still going on, a peculiar jar or vibration will be felt by the hands. If an abscess has formed, no such sensation will be experienced. If only one side is affected, the motion will be lost on that side, and distinctly felt on the other. In empyema, the vibration is also lost. The peculiar sensation alluded to may be perceived by any person placing a hand on each side of the chest, the patient at the same time coughing or speaking.

A severe and well-marked case of pneumonic inflammation, terminating in suppuration, came under my observation a few years ago, and in which the fluctuation was distinctly heard on any motion of the patient. The operation was performed with much skill and dexterity by Mr. Davis, of Andover, with the common scalpel, and fifty-two ounces, by admeasurement, of good pus, were drawn off. For upwards of five weeks there was a daily and free discharge of matter, and the prospect was pleasing; but at length the patient sunk under the disease. The body was not inspected; but as nearly a pint of pus had been thrown up from the mouth a few days prior to the performance of the operation, I have every reason to suppose the substance of the lungs had then suffered too material injury to have admitted of his recovery.

There are indeed but few cases on record of paracentesis of the thorax terminating favourably; but in vol. ii. of the Transactions of the Association of the Fellows and Licentiates of the King's and Queen's College of Physicians in Ireland, one is noticed, wherein eleven pints of an inodorous fluid resembling whey were gradually drawn off. For some days after the operation, the discharge from the orifice amounted to nearly two pints in twenty-four hours, of the same kind of fluid, but it gradually lessened. The patient's breathing became free, the lividity of countenance disappeared, his appetite mended, he daily gained flesh, in a few weeks he was able to walk and ride, and his cough had nearly subsided. In four months all discharge nearly ceased, and tolerable good health was afterwards enjoyed for some years.

In pneumonia typhodes, the general plan of treatment should be a combination of that of typhus with the local treatment of pneumonia. Bleeding from the system might prove injurious, unless employed at the onset of the disease; and where the debility has been great, there are instances on record, in which even topical blood-letting, by means of scarifications of the side, in this complaint has become so obstinate and profuse, as to baffle every attempt to stop it till the patient expired. Dry cupping, together with fomentations, cataplasms, and rubefacient liniments applied over the part, will be far more advisable in an advanced stage; the person at the same time drawing in with the breath watery vapours repeatedly throughout the day and night, by means of an inhaler. When there is a tendency to gangrene and hæmorrhage, blisters would be improper, both on account of the evacuation

which they occasion, and because they sometimes give rise to dangerous sores.

In this species of disease every thing that might derange the primæ viæ should be guarded against. The presence of noxious matter in these passages often has, however, a share in producing pneumonia typhodes, and in such cases clearing the alimentary canal ought to form an essential part of the treatment; but as the operation of cathartics would be too debilitating, and it seems very generally admitted that the chief cause of irritation is in most instances lodged in the stomach, it would appear that an emetic will be the best means of removing it. To avoid exciting purging, instead of vomiting, which would be certain to prove prejudicial, we should prescribe ipecacuanha in preference to any antimonial emetic.

When the skin is very dry and hot, saline draughts, or the liquor ammoniæ acetatis, may be administered with advantage. To allay pain, ease the cough, stop diarrhœa when it arises, or procure sleep, we may employ opium.

To support the vital powers, and resist the tendency to putrescency, it will be right in all cases of this species of pneumonia to allow a moderate use of wine, proportioning the quantity to the degree of debility which is present. If the inflammatory symptoms do not run high, and the fever shews any tendency to remit, we may add a joint use of a decoction of the bark of cinchona.

When we have succeeded in removing the symptoms of pneumonia typhodes, and the patient has advanced to the state of convalescence, it will be necessary to have recourse to bitters and aromatics, in order to strengthen the stomach and system in general. — See Dyspepsia.

PERIPNEUMONIA NOTHA, OR SPURIOUS PERIPNEUMONY.

THIS disease commonly makes its attack on those who are somewhat advanced in life, especially such as are of a phlegmatic habit, or who have had frequent catarrhal affections; and, like the other species of peripneumony, is occasioned by cold, being most prevalent in the autumn and spring, or when there are frequent vicissitudes of the weather from heat to cold.

It comes on usually with alternate chills and heats, flushing in the face, pain and giddiness in the head, a sense of lassitude over the whole body, difficulty of breathing, great oppression at the chest, with obscure pains there, together with a cough, accompanied by some degree of expectoration, and often with a throwing up of a considerable quantity of viscid mucus.

Spurious peripneumony is sometimes so slight as to resemble only a violent catarrh, and after the employment of a few proper remedies, goes off by a free and copious expectoration; but some-

which they occasion, and

In this species of theory, every thing is not left to chance, but the government is directed by the wisdom of a

power, which is not subject to the passions of men, but to the dictates of reason, and which is not

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times the symptoms run high, and an effusion of serum into the bronchiæ takes place, which destroys the patient.

If advice is applied for at an early period of the disease, and there is great difficulty of breathing, with much pain, it will be proper to bleed, in order to facilitate the circulation of the blood through the lungs; but where these do not prevail, we need not have recourse to the lancet, for much harm may be done by inducing a considerable degree of debility unnecessarily, as the disease principally attacks elderly people, and such as are of a phlegmatic habit.

To relieve the difficulty of breathing, and oppression at the chest, it will be advisable to apply a large blister immediately over the part affected; after which, if there is any nausea present, we may prescribe a gentle emetic; but if there is not, we may be content with giving small doses of antimonials, as advised in the true peripneumony to promote a perspiration: and in order to keep up a constant effect, they should be repeated every two or three hours, the patient drinking plentifully, at the same time, of tepid liquors.

These means having been adopted, we ought then to give pectoral medicines, combined with squills, as recommended under the head just mentioned.

If costiveness arises in the course of the disease, it must be removed by emollient clysters, or gentle laxatives, such as manna, potassæ supertartras, magnesiæ sulphas, &c.; taking care to avoid strong purgatives, which would be hurtful, by inducing a state of debility.

Through the whole course of the disease an antiphlogistic regimen will be most proper. Where great debility prevails, or the patient has long been accustomed to a free use of fermented liquors, a small quantity of wine will be admissible.

Considering bronchitis as only a milder species of pneumonic inflammation, and requiring somewhat of a similar treatment with cynanche laryngæa and pneumonia, I have not thought it necessary to notice it under a distinct head; but a late writer* has looked upon it as deserving of a separate investigation.

With respect to carditis, or inflammation of the heart; pericarditis, or inflammation of the pericardium; and diaphragmitis, or inflammation of the diaphragm; they are on many occasions scarcely to be distinguished from pneumonia, and probably are usually combined with it. Happily the treatment which has been recommended in pneumonia is equally suited to these inflammations, with this difference, however, that as the parts affected are immediately necessary to life, the means or cure must be employed with promptness and diligence.

* See the Treatise on Bronchitis, by Dr. Badham.

GASTRITIS, OR INFLAMMATION OF THE STOMACH.

THIS disease is divided into two species; the phlegmonous, and erysipelatous: but it is the former which is here to be treated of, the latter arising chiefly towards the close of other diseases, marking the certain approach to dissolution, and being unaccompanied with any marks of general inflammation, or by any burning pain in the stomach.

Phlegmonous gastritis is produced by acrid substances of various kinds, such as arsenic, oxymuriate of mercury, alkalies, the oxalic and mineral acids; &c., taken into the stomach, as likewise by food of an improper nature, by potations of spirituous liquors, by taking large draughts of any cold liquor when the body is much heated by exercise, dancing, &c.; by external violence from wounds, blows, &c.; and by repelled exanthemata and gout. Besides these, it may arise from an inflammation of some of the neighbouring parts, as the liver, intestines, &c., extending to the stomach.

Phlegmonous gastritis is readily to be distinguished from any other disease, by the burning pain, heat, and tension in the region of the stomach; by the aggravation of that pain when any thing is swallowed, with the immediate rejection of it; and by the sudden and greater depression of strength in this than in any other inflammation. Indeed, enteritis is the only disease it can be confounded with: and from this it may easily be discerned by the seat of pain on pressure with the hand. Gastritis is a rare disorder.

The symptoms which attend it are, a violent burning pain in the region of the stomach, with great soreness, distention, and flatulency, a severe vomiting, especially after any thing is swallowed, whether it be liquid or solid, most distressing thirst, restlessness, anxiety, and a continual tossing of the body, with great debility, constant watching, delirium, and a quick, hard, and contracted pulse. In some cases a severe purging attends.

If the disease increases in violence, symptoms of irritation then ensue; there is great loss of strength, with faintings, a short and interrupted respiration, cold clammy sweats, hiccups, coldness of the extremities, an intermitting pulse, and the patient is soon cut off.

The event of gastritis is seldom favourable, as the person is usually either suddenly destroyed by the violence of the inflammation, or else it terminates quickly in suppuration, ulceration, or gangrene. Perhaps it may sometimes occasion scirrhus of the pylorus.

If the symptoms are very mild, and proper medicines have been employed at an early period of the disease, it may, however, terminate in resolution, and that in the course of the first, or, at farthest, the second week. The pulse becoming more soft and full about the fourth day, and diminishing in frequency; the pain

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gradually ceasing; the urine depositing a sediment; or diarrhœa supervening; are to be regarded as favourable symptoms.

Its termination in suppuration may be known by the symptoms, although moderate, exceeding the continuance of eight or ten days, and a remission of pain occurring, whilst a sense of weight and anxiety still remain; and on the formation of an abscess, cold shiverings ensue, with marked exacerbations in the evening, which are followed by night-sweats, and other symptoms of hectic fever: and these at length prove fatal, unless the pus is thrown up by vomiting, and the ulcer heals.

Its tendency to gangrene may be dreaded from the violence of its symptoms not yielding to proper remedies early in the disease; and when begun, it may be known by the sudden cessation of the pain; by the pulse continuing its frequency, but becoming weaker; and by delirium, with other marks of increasing debility, ensuing.

In consequence of previous inflammation, a scirrhus of the pylorus is sometimes induced, but unfortunately we know of no symptoms which are characteristic of it. Nausea and vomiting soon after taking food, and very obstinate costiveness, are usually present. When it has ulcerated, and formed what is called cancer, there is generally an eructation of very fetid air, and a frequent vomiting of dark-coloured mucus, which is offensive. The pain is constant, though varying in degree: it is increased by taking an acrid or acid substance into the stomach; whereas mild fluids, such as milk, gruel, &c., occasion little or no uneasiness; and this circumstance may help to distinguish it from that pain which is occasioned by mere distention, for there the pain equally follows, whatever is the food taken.

Sometimes adhesions are formed between the stomach and neighbouring viscera.

Fatal cases of this disease shew on dissection a considerable redness on the inner coat of the stomach, having a layer of coagulated lymph lining its surface. They likewise exhibit a partial thickening of the substance of the organ at the inflamed part, the inflammation seldom extending over the whole of it. Where ulceration has taken place, the ulcers sometimes are found to penetrate through all its coats, and sometimes only through one or two of them.

The cure of gastritis is to be attempted by copious and repeated bleedings, employed at an early period of the disease, not regarding, or being intimidated by, the smallness of the pulse, as it usually becomes softer and fuller after the operation; nor by extreme debility, syncope, or convulsions, for all these are the effects of the disease. Draw off blood, therefore, every four or six hours, in such a quantity each time as the action of the heart will bear, and continue the practice as long as the characteristic symptoms of inflammatory disease remain. After venesection, topical bleeding, by means of several leeches over the stomach

or scarifying and cupping, may also be immediately adopted, if necessary. A large blister may next be applied to the region of the stomach, and the cure be assisted by fomentations of the whole abdomen, as well as by the frequent administration of emollient and laxative clysters. A warm bath will prove highly beneficial. Pediluvia may also be used.

The irritable state of the stomach prevents any kind of medicine from being received into it: and it is only after the violence of pain and the frequency of vomiting are somewhat abated, that we can venture to administer opiates, even in the form of clysters. When the disease is in some measure subdued, opium may be given in this way.

To sheathe the stomach, particularly in those cases where the inflammation has been occasioned by any acrid matter received into it, we should advise the patient to take frequent small draughts of some mild diluent drink, such as chicken-broth, linseed-tea, or barley-water, in which may be dissolved a small quantity of gum acacia.

When we know the nature of the offending matter, specific correctors may be thrown in: thus, when it is an alkali, vegetable acids, or the mineral ones properly diluted, should be given. When it is an acid, an alkali sufficiently diluted ought to be administered. If it is the oxymuriate of mercury or arsenic, the subcarbonate of potass properly diluted, (see Mineral Poisons,) will be advisable. It has been discovered that gelatine, when mixed with corrosive sublimate, renders it innocuous. In all cases of poison by this drug, gelatine, either fresh or dry, ought to be resorted to, and may be relied on. When the poison is of the vegetable class, the remedies recommended under this particular head must be given.

In gastritis, the antiphlogistic regimen should be observed with the greatest strictness respecting diet, both during the disease and for a considerable time afterwards: when the patient comes to be able to retain any kind of food, nothing must be given but what is of the lightest and most aperient nature. It should also be in small quantity at first, and every thing hard or acrid be avoided. The legs and feet ought at the same time to be kept warm, as the application of cold to them is apt to affect the stomach.

The tendency to suppuration is to be obviated, by pursuing the steps which have been mentioned; and when it has actually taken place, must be left to nature, only avoiding all irritation. To allay pain and irritability of the stomach, opium may be administered in small doses.

A gangrene is likewise to be obviated by the means which have been advised. When it takes place, it admits of no relief from medicine.

Where either scirrhus or cancerous ulceration of the pylorus has ensued, only a temporary relief can be expected. In the former, small doses of the submuriate of mercury, conjoined with

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hemlock, together with a milk diet, may be most proper; in the latter, opium, extractum conii, and hyoscyamus, with a similar diet, may be tried.

ENTERITIS, OR INFLAMMATION OF THE INTESTINES.

THIS, as well as gastritis, is of two species, viz. the phlegmonous and erysipelatous; the latter of which, arising only in consequence of some other disease, is not here to be noticed.

Pungent pain in the abdomen, spreading and acute round the umbilicus, nausea, vomiting, obstinate costiveness, and pyrexia, are the characteristics of enteritis.

The only disease with which enteritis can be confounded is colic; but from this it may readily be distinguished, as the former is accompanied with fever, and a quick and hard small pulse, and the pain is increased on pressure, which does not occur in colic.

The causes of enteritis are much the same with those of gastritis, being occasioned by acrid or irritating substances, indurated fæces, acrid bile, long-continued and obstinate costiveness, spasmodic colic, intus-susception, and a strangulation of any part of the intestinal canal; but another very general cause is atmospheric vicissitude, or the application of cold to some part of the skin during, or subsequent to, a state of perspiration. It is also occasioned by cold drink of any kind taken when the body is heated, in the same way as inflammation of the stomach is apt to arise therefrom.

Enteritis comes on with an acute pain, extending in general over the whole of the abdomen, but more especially round the navel, which is greatly aggravated on pressure; accompanied with eructations, sickness at the stomach, a vomiting of bilious matter, obstinate costiveness, thirst, heat, great anxiety, and a quick and hard small pulse. After a short time the pain becomes more severe, the bowels are affected with slight spasms, the whole region of the abdomen is highly painful to the touch, and seems drawn together in lumpy contractions; invincible costiveness prevails, and the urine is voided with great difficulty and pain.

The inflammation continuing to proceed with violence, terminates at last in ulceration, scirrhus, or gangrene; or it goes off by resolution.

Enteritis is always attended with considerable danger, as it often terminates in gangrene in the space of a few hours from its commencement: this event is marked by a sudden remission of pain, sinking and irregularity of the pulse, shrinking of the features, cold sweats, syncope, suppression of urine, hiccup, and distention of the belly, which sounds on being struck with the finger; and it frequently proves fatal likewise, during the inflammatory stage. If the pains abate gradually, if natural stools be

passed, if a universal diaphoresis, attended with a firm equal pulse, comes on, or if a copious discharge of loaded urine, with the same kind of pulse, takes place, a resolution and favourable termination may be expected.

Its termination in ulceration, which is not common, can only be known by the febrile symptoms remitting; by occasional pains and rigors; and by pus being mixed with the evacuations from the bowels.

Dissections of this disease shew that the inflammation pervades the intestinal tube to a very considerable extent; that adhesions of the diseased portion to contiguous parts are often formed; and that, in some cases, the intestines are in a gangrenous state, or that ulcerations have formed. They likewise shew, that besides obstinate obstructions, intus-susception, constrictions, and twistings, are often to be met with; and that in most cases the peritoneum is more or less affected, and is perceived at times to be covered with a layer of coagulable lymph. The mesentery and omentum are also found much inflamed.

The cure of enteritis must be on the same general plan as in other cases of inflammation, being directed to lessen the impetus of the blood, and remove the obstruction from the intestines.

On the first coming on of the disease, it will be necessary to have recourse to copious bleeding, which may be repeated according to the severity and violence of the symptoms, and the age and strength of the patient. Blood should be drawn from the arm in a full stream, by means of a sufficient orifice, as quickly after the pain is felt in the bowels as possible, regardless of the *apparent* debility in the pulse and patient; and it is, perhaps, of more importance in this than in any other inflammation, that the great object of venesection should be obtained by the first bleeding; for if the inflammation is not quickly subdued, mortification rapidly advances. If the object in view should not be obtained by one copious bleeding, the operation must be repeated within four or five hours again, and to such an extent as the circumstances of the case require, and that the action of the heart will bear. A third bleeding will be advisable the same or on the succeeding day, should the pain in the abdomen, and other characteristic symptoms of inflammation, remain unsubdued.

After plentiful venesection, topical bleeding, by means of several leeches applied to the abdomen, may be advisable in some cases. These steps being taken, the application of a large blister to the abdomen, or upper part of each thigh, (see Peritonitis,) will be proper. In bowel complaints of the West Indies, it is often found that the most powerful purgatives will produce no effect until a blister be applied, and that as soon as it begins to rise they then commence to operate.

To assist in relieving the pain and gripes, we may recommend warm fomentations to be applied to the abdomen, and emollient

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clysters, blended with aperients *, to be frequently injected. A clyster, composed of a solution of soap, by dissolving any lumps of feculent matter, will sometimes procure stools when an enema of another nature fails.

When the vomiting and nausea are abated, we may venture to give some cathartic medicine † by the mouth. In enteritis, attended with constipation, the submuriate of mercury, given in the dose of ten or fifteen grains, with a small quantity of cathartic extract, and made into little pills, may perhaps be the best purgative we can employ. Where this and other purgatives fail in producing the desired effect after a free use of the lancet, a trial may be made of the croton oil, in the dose of two drops on a bit of sugar, or with a little of the crumb of bread formed into a pill. Where, from there being great irritability of the stomach present, medicine in any quantity or bulk cannot be retained on it, this active cathartic may be productive of advantage, if other symptoms do not contra-indicate its use. To relax the spasm, and thereby remove one of the principal impediments to the cure, an emollient laxative clyster may be administered from time to time during the administration of purgatives. Tobacco clysters are sometimes used, but they are very apt to produce nausea and vomiting, and if not cautiously employed, may wholly extinguish life.

In all cases of enteritis, purgative medicines are certainly essential to the plan of treatment; but bleeding, although considered as of the greatest importance, is not always employed so as to produce a powerful impression upon the system at large. Our attention should always be directed principally at first to the subduing of the inflammation, by repeated large venesections on the very onset of the disease; and afterwards by local bleeding, succeeded by the application of a blister to the abdomen: and when we have effected this object, we may then resort to purgatives to remove the constipation. This latter being the effect, and not the cause of the disease, should not be the symptom first attended to.

* 1. R Infus. Sennæ Comp. f. ʒxj.

Sodæ Sulphatis, ʒj.
Ol. Ricini, f. ʒss. M.

ft. Enema.

† 2. R Ol. Ricini, f. ʒj.
Aq. Menth. f. ʒss.
Tinct. Jalap. f. ʒss. M.

Vel,

3. R Infus. Sennæ Comp. f. ʒjss.

Tinct. ejusdem, f. ʒj.

Magnes. Sulphat. ʒijj.

ft. Haustus.

* 1. Take Compound Infusion of Senna,
eleven ounces.

Sulphate of Soda, one ounce.

Castor Oil, half an ounce.

Mix them for a clyster.

† 2. Take Castor Oil, one ounce.

Mint Water, half an ounce.

Tincture of Jalap, half a drachm.

Mix them for a draught.

Or,

3. Take Compound Infusion of Senna,
one ounce and a half.

Tincture of the same, one
drachm.

Sulphate of Magnesia, three
drachms.

Mix them for a draught.

It is indeed too much the custom to have recourse to active purgatives at the very commencement of enteritis, and this, too, in very considerable doses—a practice which cannot fail to prove highly prejudicial. The intention is to evacuate the bowels; but it should be considered that purgatives empty the intestinal canal by means of their specific stimulus, which increases the secretions, and quickens its peristaltic motion: let it also be recollected, that the bowels are already excited to the utmost; that they are in, or at least tending to, a state of high inflammation, and that no pathological fact is better ascertained, than that excessive excitement destroys secretion; that by applying stimulants to an inflamed membrane, every secretion, which it was wont to pour out, is locked up.

In enteritis, as well as peritonitis, the warm bath is often made use of; but by some practitioners its effects have been considered as somewhat doubtful, if not hurtful, until the inflammatory action is checked by general and local bleedings, together with purgatives. Cloths wetted in cold vinegar and water, applied over the whole surface of the abdomen at short intervals, have been attended, in some cases of peritoneal inflammation, with the best effects, after fomentations with warm water and warm bathing have failed.

Opiates are used by many practitioners in the early stage of this complaint, where the stomach is in a very irritable state, and much vomiting prevails; but it is obvious that they must prove injurious, and ought therefore not to be employed, at least not before sufficient evacuations by bleeding, as well as by laxatives or emollient aperient clysters, have been premised. Until the obstruction is removed by evacuations, the stimulus of opium might be likely to increase the action of the vessels. When it is given by the mouth, it should always be joined with some cathartic*.

Whatever is given to the patient as aliment should be of the most mild diluent nature, such as barley-water, beef-tea, and chicken-broth; and these ought to be taken sparingly, and only in small quantities at a time, until some evacuation has been procured; as much food forced against the obstruction must necessarily increase the irritation, and of course aggravate all the symptoms. The strictest adherence to the antiphlogistic regimen must be enjoined.

When the disease is combined with spasmodic colic, the means recommended under that head must be pursued.

* 4. R Hydrargyri Submur. gr. v.

Extract. Colocynth. C. gr. viij.

Opii, gr. ss.—j.

Fiant pilulæ iij. pro dos.

* Take Submuriate of Mercury, five grains.

Compound Extract of Colocynth, eight grains.

Opium, from half a grain to one grain.

Mix these into three pills for a dose.

It is indeed too much the custom to

in very considerable doses—a practice which

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and in consequence of the fact that the force of gravity is not the same in all parts of the earth, the weight of a body is not the same in all parts of the earth. This is the reason why a body will weigh more in one part of the earth than in another. The force of gravity is greater in some parts of the earth than in others, and this is the reason why a body will weigh more in one part of the earth than in another.

In the case of a body which is not in equilibrium, the force of gravity will act on it in such a way as to bring it to a state of equilibrium. This is the reason why a body will not continue to move in a straight line, but will curve towards the center of the earth. The force of gravity is always acting on a body, and it is this force which causes a body to fall towards the earth. The force of gravity is also the cause of the tides in the ocean, and it is this force which causes the earth to revolve around the sun.

THE THEORY OF GRAVITY

The theory of gravity is one of the most important of the sciences. It is the science which deals with the forces which act on bodies, and which causes them to move. The theory of gravity is based on the fact that there is a force of attraction between all bodies, and that this force is greater for bodies which are closer together than for bodies which are further apart.

The theory of gravity is also based on the fact that the force of attraction between two bodies is proportional to the product of their masses, and inversely proportional to the square of the distance between them. This is the law of universal gravitation, and it is the basis of the theory of gravity. The theory of gravity is one of the most important of the sciences, and it is the science which deals with the forces which act on bodies, and which causes them to move.

In severe obstructions of the intestinal tube, accompanied by obstinate constipation, and where purgatives fail in procuring motions, it has been a common practice to have recourse to quicksilver in considerable quantity, and no doubt it will find its way through the intestinal tube in most instances merely by its gravity; but in cases of enteritis, where there is intus-susceptio, or it is combined with hernia of any species, this remedy cannot fail to prove highly injurious.

As enteritis is very apt to recur from slight causes, the greatest circumspection will be requisite after recovery. Improper food and exposure to cold are therefore cautiously to be avoided, and costiveness to be immediately removed. If there be any appearance of suppuration and ulceration, particular attention becomes still more necessary, as it will give the ulcers a better chance of healing.

In the cure of strangulated hernia, the judicious surgeon will never place his patient on his head, and toss him about in the manner sometimes adopted, as such a practice might increase instead of abate tumefaction; nor will he attempt to push the protruded parts by force through an aperture which bears no proportion to their dimensions. No; he will enjoin composure, and strictly keep in view, that until the obstruction in the intestine, which is the effect of inflammation, is removed by copious and repeated venesections, its being replaced in its original situation ought not to be attempted. In a word, bleeding to a great extent, and avoiding manual efforts, will be the most likely means to ensure success in all cases of strangulated hernia. Where our endeavours fail, recourse should be had in due time to the proper operation for removing the stricture on the protruded parts, to guard against gangrene.

HEPATITIS, OR INFLAMMATION OF THE LIVER.

PYREXIA, tension, and pain of the right hypochondrium, often pungent, as in pleuritis, but sometimes dull, pain in the clavicle and top of the right shoulder, uneasy lying on the left side, difficult respiration, dry cough and vomiting, are the characteristics of hepatitis: very frequently there is some degree of jaundice.

Hepatitis has generally been considered of two kinds; the one acute, the other chronic; the former shewing the essential character of genuine inflammation; the latter exhibiting symptoms of less violence as to their inflammatory tendency, but an enlargement and hardness of the liver, with an obtuse pain.

Besides the causes producing other inflammations, such as the application of cold, external injuries from contusions, blows, &c., this disease may be occasioned by violent exercise, by intense summer heats, by long continued intermittent and remittent fevers, by high living, and an intemperate use of vinous and spirituous

liquors, but more particularly the latter, and by various solid concretions in the substance of the liver. In five cases out of six, the exciting cause of acute hepatitis will be found to be the partial application of cold or wet when the body is heated, or over-fatigued by violent exercise. Derangement of the digestive organs, suppressed secretions, inflammations, compression, fevers, and mental solicitude, are very general causes of obstructions and diseases of the liver.

In warm climates this viscus is more apt to be affected with inflammation than any other part of the body, probably from the increased secretion of bile which takes place when the blood is thrown on the internal parts by an exposure to cold; or from the bile becoming acrid, and thereby exciting an irritation in the part. An inflammation of the liver, and the diseases consequent thereon, are indeed affections more frequently to be met with in warm climates than in cold ones, particularly in the East and West Indies, where few Europeans can reside for any length of time without being attacked by them. The liver in warm climates seems to be the seat of disease nearly in the same proportion that the lungs are in Great Britain. Both acute and chronic hepatitis are frequently met with in persons who come to Europe from the East and West Indies; and in those who have been affected when in those climates they are very apt to recur by the application of causes which would be likely to have a different effect upon any body else.

Between the hepatitis of India and that of Europe there is no small dissimilarity in the symptoms. The flux, which may be termed the pathognomic of the former, is always wanting in the latter. That of India partakes more of inflammatory congestion and obstruction; the other of active inflammation, and if not early checked, frequently runs on to suppuration. Such an occurrence in India or the West Indies is principally met with among those lately arrived from Europe, and may in most cases be traced to intemperance, violent exercise in the sun, or sudden exposure to cold when the body has been in a state of considerable perspiration. The hepatitis of India is generally allowed to be, in all similar stages, a milder disease than the sporadic hepatitis of this country, the phlogistic symptoms being less violent*.

The acute species of hepatitis comes on with a sense of chilliness preceding pain in the right hypochondrium, sometimes dull, sometimes sharp, extending up to the clavicle and shoulder of that side, most usually; which is much increased by pressing upon the part, and is accompanied with a cough, oppression of breathing, and difficulty of lying, except on the side affected; together with nausea and sickness, and often with a vomiting of bilious matter; the intestines are generally inactive, and the

* See Dr. Saunders's Treatise on the Liver. See Essay on the influence of Tropical Climates on Europeans, by J. Johnson, M.D.

creations in the substance of the liver. In no case out of six is application of cold or wet when the body is hot and the patient in by violent exercise. The treatment of the liver is to be directed to the relief of the congestion, and to the removal of the morbid matter. The liver is the first of the organs to be affected in the disease, and it is the first to be relieved. In many cases the liver is the only organ that is affected, and it is the only one that is relieved.

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stools shew a deficiency of biliary secretion, or at least of any intermixture of it with them; the urine is of a deep saffron colour, and small in quantity; there is loss of appetite, great thirst, and costiveness, with a strong, hard, and frequent pulse, of from 90 to 100 in a minute, and sometimes intermitting; the skin is hot and dry at the same time, and the tongue covered with a white, and sometimes a yellowish fur; and when the disease has continued for some days, the skin and eyes become tinged of a deep yellow, particularly when the inflammation is produced by calculi in the parenchyma of the liver.

The appearance of the blood is somewhat remarkable just before it coagulates, when, the red part falling to the bottom, and the buffy coat not yet being formed, it appears of a dull green colour. This is owing to the mixture of the yellow coloured bile with the purple-coloured venous blood, as yellow and purple form green; the coagulable lymph contains none of the purple colour, therefore the buffy coat is not green, but yellow. The same appearances are observed in the blood of a person labouring under jaundice.

In hepatitis, as well as in other diseases, we do not always find the symptoms of the same degree of violence as they are described in the definition: thus, in some cases the fever is severe, in others it is scarcely perceptible: in some instances the pain is very acute and violent; in others, collections of pus have been found after death, when no pain has been felt. When the pain is seated deep in the substance of the liver, as that possesses little sensibility, the pain is usually obtuse; but when the surface is affected, it is acute, and apt to spread to the diaphragm and lungs, producing cough.

Both ancient and modern nosologists have made a distinction between the symptoms that occur when the inflammation occupies the convex surface of the liver, and those that are present when the disease affects the concave. It is said, when great difficulty of breathing and cough accompany the pain in the region of the liver, that these symptoms indicate the inflammation to be seated in the superior or convex part; but where the inflammation occupies the concave or inferior surface, which lies contiguous to the stomach and duodenum, there is more sickness and vomiting; and, moreover, the pain is not so violent in the region of the organ as in the other instance.

My own observations, during a practice of many years in the West Indies, (where hepatitis is a disease of frequent occurrence,) as well as in England, do not permit me to say that the symptoms which have just been pointed out are so unequivocal as had been represented by nosologists.

It seems probable, says Dr. Cullen, that acute hepatitis is always an affection of the external membrane of the liver, and that the parenchymatic is of the chronic kind.

The chronic species is usually accompanied with a morbid complexion, loss of appetite and flesh, lowness of spirits and despond-

ency of mind, headach or giddiness, general weakness, a morbid sensibility of the nervous system, costiveness, indigestion, flatulency, acidity, and pains in the stomach, a yellow tinge of the skin and eyes, clay-coloured stools, high-coloured urine depositing a red sediment and ropy mucus; an obtuse pain in the region of the liver, extending to the shoulder, together with a sense of weight, unusual fulness, and some enlargement and hardness of the organ, and not unfrequently with a slight difficulty of breathing, or dyspnoea. In some cases of chronic inflammation of the liver, the pulse has been observed to intermit; and probably induced either by the blood through the hepatic artery being obstructed by the scirrhusity, by an accumulation of it in the branches of the vena portarum, or by bile in the hepatic ducts.

The symptoms are, however, often so mild and insignificant, as to pass almost unnoticed, as large abscesses have been found in the liver upon dissection, which in the person's lifetime had created little or no inconvenience, and which we may presume to have been occasioned by some previous inflammation.

We may readily distinguish hepatitis from pneumonia by the pain in the former extending into the shoulder; by the sallowness of the countenance; by the cough being unaccompanied by expectoration; and by the less degree of dyspnoea. The heat and pain not being increased upon taking any thing into the stomach, its being able to retain whatever liquids or medicine are received into it, without the immediate rejection of them, and the less prostration of strength, will distinguish it from gastritis. Hepatitis may be discerned from spasm on the gall-ducts, by there being no nausea, by the pain being permanent, by the pulse being 100 and upwards in a minute, and by the patient always preferring to keep the body in a straight quiescent posture; whereas the greatest ease, when there is spasm on the gall-ducts, is obtained by bending the body forward on the knees.

Hepatitis, like other inflammations, may end in resolution, suppuration, gangrene, or scirrhus, in which the liver becomes swelled and hard; but its termination in gangrene is a rare occurrence. It is frequently accompanied with chronic obstructions. Its tendency to run into suppuration is not so great in this country as in warm climates. Indeed it is a rare occurrence here. The period of suppuration is influenced by the degree of inflammation, the season of the year, climate, and the remedies that have been employed. Scirrhus may exist in the liver without previous active inflammation, as in those who have long resided in the East or West Indies. Indeed, a scirrhusity of the liver most generally arises from this cause, and by an abuse of ardent spirits.

The disease is seldom attended with fatal consequences of an immediate nature, and is sometimes carried off by a hæmorrhage from the nose or hæmorrhoidal vessels; and likewise by sweating, by a diarrhoea, or by an evacuation of urine depositing a copious sediment. In a few instances it has been observed to cease on the

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appearance of erysipelas in some external part. Serous effusion in the cavity of the abdomen is sometimes a consequence of hepatitis shewing itself under the form of ascites.

Hydatids now and then form in or on the liver, and sometimes acquire so considerable a size and hardness, as to be distinguished with great difficulty from chronic hepatitis terminating in suppuration. A case of this nature, which had been of long standing, in a lady of about forty-eight years of age, and the mother of a large family, lately came under my observation. She had some time back consulted some of the most eminent surgeons in London, as also one of this city, by whose advice she was put under a course of mercurial frictions, with the internal use of the pilula hydrargyri and nitric acid, under the supposition that her disease was induration and enlargement of the liver, which might ultimately terminate in a suppuration. There was wanting, however, that yellow tinge of countenance and derangement in the biliary system, to satisfy me perfectly that a just idea had been formed of the nature of her complaint. Laterally it was obvious that a fluid was contained in the tumour, which had now acquired so considerable a size as to render an operation indispensably necessary. On performing this it became evident that the disease was really a very large hydatid, as sixteen pints of water were drawn off through the canula, towards the close of the flowing of which a small quantity of lymph came away.

The most favourable signs in hepatitis are, a gradual abatement of the pyrexial symptoms, an improvement in the complexion, the strength not much reduced by the remedies, return of the appetite, and an increase in the bulk of the body. Intensity of pain in the region of the liver, a full and frequent pulse, considerable heat, thirst, dry skin, costiveness, and frequent rigors, denote approaching suppuration.

When the inflammation terminates in the formation of matter, the inflammatory symptoms gradually subside, and give way to those of suppuration. The fever becomes somewhat intermittent, frequent rigors or shiverings are felt, the sense of weight in the part increases, the pains are less acute but throbbing, the tongue is white, with flushings of the countenance; and when the abscess is formed near the edge of the liver, or towards the concave surface, it not unfrequently projects under the false ribs, so that the fluctuation may be felt externally. If the abscess forms on its convex surface, it points towards the cavity of the thorax, corrodes through the diaphragm, and distends the pleura, which it sometimes pushes through the interstices of the ribs. At last the matter finds its way through the intercostal muscles, and may be distinguished through the integuments. If the abscess is apparent, there will be found a fluctuation in the centre, while the circumference remains hard. A change of colour in the skin only occurs where a great quantity of matter is accumulated; or where, by its bad quality, it changes the colour of the teguments. If

much pressure on the tumour with the fingers is employed, a pulsation may often be felt, particularly in irritable habits. Sometimes the inferior lobe of the lungs contracts adhesions with those points of the diaphragm connected with the abscess, by which means the matter will be discharged by the bronchiæ: this is; however, a rare occurrence; but it often happens that the matter is effused into the cavity of the thorax, and forms a purulent empyema. It likewise happens now and then, that the sides of the abscess, forming adhesions with the stomach, or much oftener with the colon, the matter is discharged into their cavity, and evacuated either by vomiting or stool.

On dissection of those who die of hepatitis, the liver is often found much enlarged and hard to the touch, its colour is more of a deep purple than what is natural, and its membranes are more or less affected by inflammation. Dissections likewise shew that adhesions to the neighbouring parts often take place; that tubercles, as well as vesicular cysts, denominated hydatids, are sometimes found in it; and that large abscesses, containing a considerable quantity of pus, are often formed in its substance. Biliary calculi are now and then met with. In a few instances, the livers of those who have died of this disease have been found in a putrid state, resembling a honeycomb; but the most common appearance to be observed in those who die of diseased liver is the formation of tubercles* in its substance, with an exception to adhesions. The liver has not unfrequently been found after death to be indurated, or otherwise injured, without any marked indication of disease during the life of the patient, excepting dyspepsia or simple indigestion.

What constitutes great difficulty in managing hepatitis is, that in many cases the symptoms which are primary, and indicative of inflammatory affection, are but very slightly marked, even when it is in such a degree as to run with readiness into suppuration, and particularly in the East and West Indies. The pain in the side is not constant or acute, the patient himself takes little notice of it, seldom mentions it unless he is asked about it, and when questioned concerning it, he only tells you, perhaps, that he has felt at times slight pains about the pit of the stomach, or in the right side. It is only by observing the secondary symptoms, such as a diarrhœa, or a short dry cough, and pain felt at the top of the shoulder, or that there is a degree of fulness or tenderness on pressing on the organ a little hard, with some yellowness of the eyes and countenance, that the true state and nature of the disorder is to be ascertained in such cases.

During the inflammatory stage of acute hepatitis, it will be proper to adopt general bleeding, proportioning the quantity which is taken away to the severity of the pain, and the degree of fever that is present, and repeating the operation very soon again

* See Morbid Anatomy, by Dr. Baillie.

The following is a list of the names of the members of the American Medical Association who have been elected to the office of President of the Association for the year 1911.

The following is a list of the names of the members of the American Medical Association who have been elected to the office of Secretary of the Association for the year 1911.

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if the symptoms do not greatly abate, and the inflammatory action appear to be subdued. By neglecting to bleed in due quantity, and promptly to repeat the operation at the commencement of acute hepatitis, there will be danger of suppuration ensuing. In warm climates, general bleeding may be used with greater moderation than in cold ones. After venesection, we should give a proper dose of hydrargyri submuriæ with jalap, or some other cathartic, repeating it every other day until the inflammatory symptoms subside. These steps being taken, we may recommend the application of several leeches over the region of the liver, or we may draw off a sufficient quantity of blood by applying the scarificator and cupping-glasses.

Some practitioners disapprove of bleeding from the system in this disorder, and recommend in its stead to draw blood from the neighbourhood of the part, by means either of leeches, or scarifications and cupping, which may be the preferable way in those cases which are unattended with much pain or pyrexia, or where the disease has followed a severe intermittent or remittent fever, and consequently the patient is in a cachectic state; but in those where the pain is acute, the pulse full and strong, and the febrile heat and thirst are considerable, copious and repeated venesection at an early period of the disease will be necessary. It will, however, be better to take away at once a quantity proportioned to the age and temperament of the patient, and the degree and extent of the disease, than by repeated small bleedings. It will be proper also in bleeding to make a large orifice, as physicians have been struck at all times with the effect produced by taking the blood from a large orifice * in inflammatory diseases.

If the symptoms do not abate in consequence of these means, a large blister applied over the region of the liver will be likely to prove serviceable. Should it be inclined to heal up too rapidly, or before the desired intention is obtained, a fresh one must be laid on. A succession of blisters will be far preferable to keeping open the first one with any kind of stimulating ointment.

In every case of acute hepatitis, the whole of the antiphlogistic plan is to be rigorously pursued, particularly where the febrile symptoms run high, and endanger a termination in suppuration; and therefore it will be understood, that a farinaceous or gruel diet is to be strictly enjoined at the commencement, carefully shunning animal food in broths or otherwise; that thirst is to be assuaged by a free use of cooling drinks impregnated with vegetable acids; that cool air is to be freely admitted into the apartment of the sick, and that the intestines are to be kept perfectly open with gentle purgatives, such as solutions of the neutral

* See Dr. George Fordyce's Fourth Dissertation, p. 50.
Fifth ditto, p. 15.

salts *, or jalap, with the submuriate of mercury administered from time to time.

As in other inflammatory complaints, so in this we may excite a diaphoresis by means of nauseating doses of tartarized antimony, to which we may join the nitrate of potass †. The pediluvium, with a plentiful use of mild diluent and cooling liquids, will also be proper. Putting the patient into a warm bath may be advisable in those cases where the skin is dry, and the pain in the region of the liver very severe.

In acute hepatitis, when, after having strictly pursued the antiphlogistic course which has been pointed out for four or five days, the disease is found not to give way, we should call in the aid of mercury. Some practitioners, particularly in the East and West Indies, have recourse to it on the first attack; but the most judicious do not in general use it to effect a mercurial operation, until the urgent inflammatory symptoms have been somewhat subdued by an antiphlogistic treatment. In every inflammatory affection of the liver, and where febrile excitement is present, but more particularly in northern climates, although it may be advisable to employ mercury as a purgative at the commencement of acute hepatitis, still I am of opinion that we should not then use it with the view of promoting salivation. The remedy in question, when properly used, is certainly attended with wonderful efficacy, but it appears improper on the first attack of acute hepatitis, which, like other visceral inflammations, readily yields in Great Britain to the ordinary plan of depletion ‡.

We may begin the mercurial course at the expiration of the fourth or fifth day of the disease. The most proper way of introducing mercury into the system will be, by rubbing in a small quantity of the ointment (perhaps about one drachm) in the neighbourhood of the part affected, every night, until a slight degree of salivation is excited, or rather until some very obvious effect is produced on the constitution; by which means we shall in general

‡ See Dr. Saunders's Treatise on Diseases of the Liver.

* 1. R Infus. Sennæ Comp. f. ʒjss.

Magnes. Sulphat. ʒiij.

Tinct. Jalapæ,
Syrup. Rhamni, aa f. ʒj. M.

ft. Haustus.

† 2. R Haust. Salin. f. ʒjss.

Potassæ Nitratis, gr. x.—xv.

Antimon. Tartarizat. gr. ʒ.

Syrup. Althææ, f. ʒij. M.

ft. Haustus.

* 1. Take Compound Infusion of Senna,
one ounce and a half.

Sulphate of Magnesia, three
drachms.

Tincture of Jalap,
Syrup of Buckthorn, of each one
drachm.

Mix them for a draught.

† 2. Take Saline Draught, one ounce and
a half.

Nitrate of Potass, from ten to
fifteen grains.

Tartarized Antimony, the sixth
of a grain.

Syrup of Marshmallow, two
drachms.

Mix them for a febrifuge draught.



be able to disperse the swelling and hardness. It will be advisable to rub the ointment on the right side, in preference to any other part, because some advantage may possibly be derived from the mere friction over it.

If rubbing in the mercury in the neighbourhood of the part is attended with any pain or inconvenience to the patient, the unction may then be applied to the groins, taking care, however, not to carry it much beyond the point bordering on salivation. With the view of assisting the discussion of the inflammation, and obviating any severe effects from the use of mercury, some gentle purgative, such as a solution of any neutral salt in an infusion of senna, may be taken every third or fourth morning.

A modern writer mentions,* that it is by no means sufficient to render the mouth sore by mercury; it must be carried to the extent of producing a copious salivation, as the disease never yields till the saliva flows freely. In this opinion I believe he is singular; but indeed the generality of the East India practitioners seem to carry the point too far.

Should we wish the mercurial action to be soon effected, we may employ mercury internally as well as externally; and to make its effect the more certain, we may join small doses of opium or antimony with it, administering them in the form of a pill.† If we find the submuriate of mercury not to answer our wishes, we should substitute the pilula hydrargyri, the patient taking one or two every night at bedtime, as may be judged necessary. In hepatic derangements this remedy has, of late years, been very extensively and usefully employed in the United Kingdom.

If the disease yields readily, a short course of mercury will be sufficient; but if not, its use ought to be continued for, perhaps, five or six weeks.

I wish here to recapitulate the treatment of acute hepatitis just pointed out, and to say, that he who will most successfully combat the disease, will endeavour first to arrest and subdue the inflammatory action, as much as possible, by copious bleeding from the arm, and afterwards by leeches or scarifications

* See Medical Sketches, by Sir James M'Gregor, M.D.

† 3. R Hydrargyr. Submur. ʒi.

Opii,

Camphoræ, āā ʒss.

Syrup. Simpl. q. s. M.

ft: massa, in pilulas æquales xxx. distribuenda, capiat j. vel ij. pro dos.

Vel

4. R Hydrargyr. Submuriat. ʒj.

Opii Puriff. ʒj.

Antimon. Tartarizat. gr. v.

Syrup. Simpl. q. s. M.

ft. massa, in pilul. xxx. divid. j. mane et nocte quotidie sumenda.

† 3. Take Submuriate of Mercury, one drachm.

Opium,

Camphor, of each half a drachm.

Common Syrup, a sufficiency

to form the mass, which divide into thirty pills, and take from one to two for a dose.

Or,

4. Take Submuriate of Mercury, one drachm.

Opium, one scruple.

Tartarized Antimony, five grains.

Syrup, a sufficiency to form the mass; divide this into thirty pills, and let one be taken night and morning.

over the region of the liver, succeeded by blisters, while mercurial purgatives are at the same time employed to clear the whole line of the alimentary canal. When by these means the vascular excitement is reduced to a certain level, then a restoration of the secretion in the liver will be the surest safeguard against future lesion, both of structure and function, in this important viscus; and this is to be done by a judicious exhibition of mercurials joined with antimonials, or even with opium. Throughout the whole of this course, there will be a strict necessity to avoid the remote and exciting causes which brought on the disease.

When assistance has not been procured in due time, or the means which have been employed to carry off the inflammation in the liver have not been attended with the desired effect, and suppuration has ensued, we must endeavour to promote the formation of proper pus, and the discharge of the abscess externally.

To effect the first of these intentions, the patient should be directed to take a drachm of the powdered bark of cinchona every two or three hours, using at the same time a generous nutritive diet, with a moderate quantity of wine, which course ought to be continued until the suppuration is completed; and to promote the second intention, a large emollient poultice should be kept constantly over the part, well fomenting it twice a-day, previous to the application thereof. When the tumour points outwardly, and has become somewhat soft, with evident fluctuation, we should immediately open it in the most dependent part, taking care not to touch its adhesion with the corresponding portion of the peritoneum. The opening may be made through the external integuments with a scalpel, and on reaching the abscess it may either be touched with a lancet, or be pierced with a trocar, which may be the preferable way, as we shall thereby have it in our power to evacuate the matter slowly and gradually, which in large collections is a point of importance, and therefore deserving of attention. The fluid discharged is most commonly of a greyish colour, but not invariably so. To facilitate the discharge of the matter, the patient ought to be placed in the most favourable position, and the belly be gradually compressed by means of a proper bandage. The dressings ought to be simple, and frequently renewed. Should the lips of the wound after some days seem disposed to close before the healing of the interior parts, a tent of soft lint, dipped in some digestive ointment, may be inserted into them. To the end of the cure, cinchona with stomachic bitters, wine, and a generous diet, will be proper. Suppuration of the liver is a disease of such frequent occurrence in the East Indies and other warm climates, that the practitioners there are become very expert at this operation, and frequently perform it with safety when the tumour does not point at all, judging merely by the preceding progress of the case, and the degree of fullness in the hypochondrium.

Abscesses in the liver sooner heal when opened than similar

affections in other parts of the body, and perhaps with less inconvenience; and, therefore, whenever we have good grounds for suspecting that matter has formed in this viscus, we may advise an opening to be made into the abscess, whether situated on the convex part of it or not, in preference to suffering it to break internally, by which its contents must be evacuated into the abdomen, to the almost certain destruction of the patient.

Should the abscess discharge itself into the cavity of the chest, and so form purulent empyema, the proper operation ought to be performed without any loss of time.—See Empyema.

The common plan of cure in chronic hepatitis is by mercury, and it is certainly the most effectual practice. It should be given in small doses and slowly, so as to keep up a brassy taste in the mouth for a considerable time, as it promotes the secretion of bile, and excites the extreme vessels on the surface. To increase the latter effect, it has, however, been found useful to combine it with a small proportion of antimonial powder, as likewise of opium, to protect the bowels from irritation.

The next most salutary process is to keep up the regular peristaltic motion of the intestines, and excite the mouths of the excretory ducts of the liver. With this view one or two of the pills prescribed below * may be taken occasionally at bedtime, succeeded the ensuing morning by a draught composed of some neutral salt, as prescribed in the treatment of acute hepatitis.

Our attention is at the same time to be directed to the cuticular discharge, which ought to be promoted by the most gentle means, such as moderate exercise and flannel next to the skin. When hepatic obstructions exist, with too great a determination to the bowels, keeping them in an irritable state, the utility of flannel is apparent. The assiduous and frequent application of the flesh brush, or friction with the hand, over the hypochondriac region, will be found to excite the healthy action of the biliary organ in no slight degree. A tepid bath will be useful, but some caution will be requisite in avoiding subsequent chillness. Warm mineral waters may also be taken internally.

When there is much local uneasiness, repeated blisters may be had recourse to with some advantage. General bleeding is never necessary in chronic hepatitis: in a few instances, topical may be serviceable.

Among the local means, I beg leave to observe, that in those instances where the liver has been exceedingly enlarged, decided

* 5. R Extract. Colocynth. C. 3j.

Hydrargyr. Submur. ʒj.

Antimon. Tartarizat. gr. iv.

Ol. Carui, m̄ v.

Syrup. Simpl. q. s. M.

ft, Pilulæ xxx.

* 5. Take Compound Extract of Colocynth,
one drachm.

Submuriate of Mercury, one scruple.

Tartarized Antimony, four grains.

Oil of Caraway, seven drops.

Common Syrup, a sufficiency to form
the mass, which is to be made into thirty pills.

benefit has sometimes been derived from the application of a plaster of ammoniacum with mercury, spread largely over the diseased surface, so as to act medically, as well as on the principle of a bandage in giving some support.

In that species of diseased liver which arises from an immoderate use of vinous or spirituous liquors, a mercurial course has been objected to by Dr. Trotter. In the tubercular or scirrhus liver, he tells us*, it had seldom appeared to him to be of any service, beyond its action in keeping the bowels open, when costiveness was to be guarded against. My own experience, however, does not lead me implicitly to adopt this conclusion; on the contrary, in more than one instance of incipient scirrhus liver, slightly complicated with dropsy, I have seen mercury employed with advantage. Mercury, however, will not fail to prove injurious in those cases where the structure of this viscus is considerably destroyed.

We have been informed, that of late the nitric acid, largely diluted with water and mucilage of syrup †, has been used in the East Indies in chronical affections of the liver, and it is said with much benefit.

As an auxiliary remedy, it certainly may be employed with safety and advantage. Where the disease arises in a person of a scorbutic habit, there is no doubt that the use of mercury would be highly improper, as it would infallibly increase the symptoms, and hasten the fatal termination thereof; and in such cases, the nitric acid may be given with much advantage, as it will not only relieve the hepatic affection, but may likewise, in some degree, amend the scorbutic tendency.

In the treatment of chronic inflammation of the liver, great commendation has been bestowed upon the taraxacum (dandelion) by a modern writer ‡, who tells us that he has seen the most decided advantage, both in incipient scirrhus of the liver, and also in several chronic derangements of the stomach, in the dose of half a drachm of the extract twice a day. Either a strong decoction, or the fresh expressed juice, in doses of from two ounces to four, two or three times within the twenty-four hours, will however be found more active preparations.

Enlargements of the liver and spleen are sometimes the consequence of long continued intermittents, and they not unfrequently resist the effects of mercury, although the salivary glands have been sufficiently excited. In cases of this nature we may

* See his Essay on Drunkenness, and its Effects on the Human Body.

† Dr. Robert Pemberton's Treatise on Diseases of the Abdominal Viscera, p. 42.

† 6. R. Acid. Nitric. Dilut. \mathfrak{m} vi.—x.

Aq. Puræ, f. 3xij. M.

Syrup. Cort. Aurant. f. 3ij. M.

ft. Haustus ter quaterve die sumendus.

† 6. Take Diluted Nitric Acid, from nine to fifteen drops.

Pure Water, twelve drachms.

Syrup of Orange Peel, two drachms.

Make them into a draught, which is to be taken three or four times a day.

make trial of the *succus inspissatus conii*, probably with better success. — See Intermittents.

The diet best adapted for persons labouring under chronic hepatitis, is such as is attenuant, nutritive, and easy of digestion; avoiding salted meats and greasy substances. By degrees it may be improved by the addition of broths, light animal food, &c., until health is perfectly restored. He who labours under obstructed liver, and hopes to prolong his existence, must abandon what are called the pleasures of the table, and observe a rigid temperance with respect to diet. If wine is drank, it ought to be diluted with water: but in most cases this last alone will be the best beverage. Malt liquors will seldom agree, and spirituous ones ought to be shunned as poison. Late hours and night air ought to be cautiously avoided.

Such as labour under chronic affections of the liver in India, or the West Indies, should never return to Europe in the winter. Those of the former who cannot undertake the long and expensive voyage to Europe, ought to change a continental for an insular situation. The most proper places will be, Prince of Wales' Island, which enjoys a milder air and a lower range of temperature than any of the Presidencies; or St. Helena, which approximates more to the climate of Europe than that of any other inter-tropical situation. Those of the West Indies may go to America, and they will be likely to experience considerable benefit from the voyage and sea air.

The complicated diseases which are often brought on by a long residence in warm climates, affecting the secretion of bile, the functions of the stomach and alimentary canal, and which generally produce organic derangement in some part of the hepatic system, often receive much benefit from the Bath waters, if used at a time when suppurative inflammation is not actually present; and they will certainly prove a good auxiliary to other proper means.

Cheltenham water may also be taken with singular advantage by those who labour under any chronic affection of the liver; and this spring is indeed the resort of most of those who have had their biliary organs injured by a long residence in a warm climate. This water, besides containing salts of a purgative nature, is likewise a chalybeate; and the iron is suspended by carbonic acid, of which gas the water contains about an eighth. Its great efficacy, however, in chronic hepatitis, is owing to the gentle continued purging which it excites.

Persons of a bilious habit, and who are at the same time costive, will find much benefit by taking two or three of the aperient pills here recommended*, at night, or in the morning, as necessity may require.

* 7. R Extract. Colocynth. C. 3j.

—— Jalapæ, 3ss.

* 7. Take Compound Extract of Colocynth,
one drachm.

Extract of Jalap, half a drachm,

SPLENITIS, OR INFLAMMATION OF THE SPLEEN.

THIS disease comes on with rigors, succeeded by heat, thirst, and other febrile symptoms; there is an anxiety and straitness in the præcordium, with difficult respiration, often conjoined with a cough without expectoration. The patient complains also of external heat, tension, pains in the left side, which sometimes extend through the whole region of the abdomen, or shoot through the diaphragm, and into the left shoulder. The pains are increased on pressure, and are pulsatory, pungent, and burning in various degrees. The pulse on the left side is sometimes partially suppressed, often intermittent, weak, and not quick. There is lassitude and loss of strength, watchfulness, and sometimes delirium; dyspepsia, anorexia, vomiting of green bilious matter, and sometimes difficulty of urine; from an affection of the kidney or bladder; swelling in the region affected, representing the form of the spleen, faintings, and bleeding from the nostrils at the height of the disease: but the most remarkable symptom which attends, is the bloody vomiting, which most authors have considered as peculiar, and have designated by various names. By the ancients it was termed *atra bilis*. At the commencement, the intestines are rather confined, but they soon become relaxed, and emit substances somewhat coloured by black blood.

Like the liver, the spleen is often attacked with chronic inflammation, and in time becomes enlarged and indurated. Sometimes suppuration ensues, and forms an abscess.

The causes of the disease are most generally the same with those of other inflammatory diseases; but enlargements of the spleen are frequently the consequence of long-continued intermittents; and these, as well as indurations of the liver, are called *ague-cakes*. They arise, no doubt, from too great a determination of blood to these viscera during the several attacks of the cold fits.

With respect to the prognosis in splenitis, it need only be observed, that, like other inflammations, it may terminate either in resolution, suppuration, or scirrhus. Sometimes it is carried off by a vomiting of dark-coloured matter, resembling coffee-grounds: sometimes by a diarrhœa, and sometimes by a hæmorrhage from the hemorrhoidal vessels. The vomiting of grumous matter is under common circumstances to be considered a favourable and critical evacuation, yet it sometimes proceeds to a fatal excess. Where splenitis terminates in suppuration, and the contents of the abscess are evacuated in the cavity of the abdomen, the event may

Antimon. Tartarizat. gr. iv.

Sapon. Venet. ʒj.

Ol. Carui, ℥j viij.

Syrup. Rhamni, q. s. M.

ft. massa, in pilulas xl. distribuenda.

Tartarized Antimony, four grains.

Soap, one drachm.

Oil of Caraway, twelve drops.

Syrup of Buckthorn, a sufficiency to form the mass into forty pills.

prove fatal sooner or later; but a simple enlargement of the spleen is often supported for many years without any very great inconvenience or hazard to the patient.

Dissections of dead bodies shew that the spleen is inflamed and sometimes gangrenous, and that the surrounding viscera partake of the inflammation: occasionally an abscess is formed.

The conclusions which have been drawn from a multitude of pathological as well as anatomical facts are, that the spleen is an organ peculiar to red-blooded animals; that it is of great importance in preparing and mixing the blood; and that its action is of great consequence to the liver.

During the acute stage of splenitis we must adopt the antiphlogistic plan, by general and topical bleedings, by purging frequently with the submuriate of mercury combined with jalap, and by the repeated application of a blister over or near the part affected. If the inflammation should terminate in suppuration, the abscess is to be encouraged to discharge its contents externally, by fomentations and poultices. Where its termination is in enlargement and induration, or scirrhus, we must employ mercury at an early period, both as a purgative and deobstruent, in the manner advised for the removal of chronic inflammation of the liver. The nitric acid may also be tried. If these remedies are not attended with success in removing the enlargements, although the salivary glands have been sufficiently excited, we may make trial of the *succus inspissatus conii*, which has been found to answer when mercury has failed*. —See Intermittents.

NEPHRITIS, OR INFLAMMATION OF THE KIDNEYS.

NEPHRITIS, properly considered, appears to be of two kinds; the one arising from the general causes of inflammation, and being seated principally in the external membrane of the kidney; the other occasioned by the stimulus of gravel or a stone in the pelvis of it, and the inflammation occupying the interior parts. It is, however, only the first of these that I mean here to investigate; the other will be noticed under the head of Calculus.

This species of inflammation may be distinguished from the colic, by the pain being seated very far back, and by the urine being of a deep red colour, voided frequently, and in small quantity at a time; and it may be known from rheumatism, as in nephritis the pain is not much increased by the motion of the body.

It is to be distinguished from a calculus in the kidney or ureter, by the symptoms of fever accompanying or immediately following the attack of pain, and these continuing without any

* See Essay on Hepatitis and other Bilious Complaints, in India as well as Europe, by Charles Griffith, M.D.

remarkable intermission; whereas, in a calculus of the kidney or ureter, they do not occur until a considerable time after a violent pain has been felt. In the latter case, too, a numbness of the thigh, and a retraction of the testicle, on the affected side, usually take place, together with a constant nausea and vomiting.

Nephritis is to be distinguished from lumbago by the seat of the complaint, discovered upon pressure; by the dysuria and micturition, by its being frequently attended with vomiting, and by the pain extending along the course of the ureter, and not being much increased on motion, or by an erect posture.

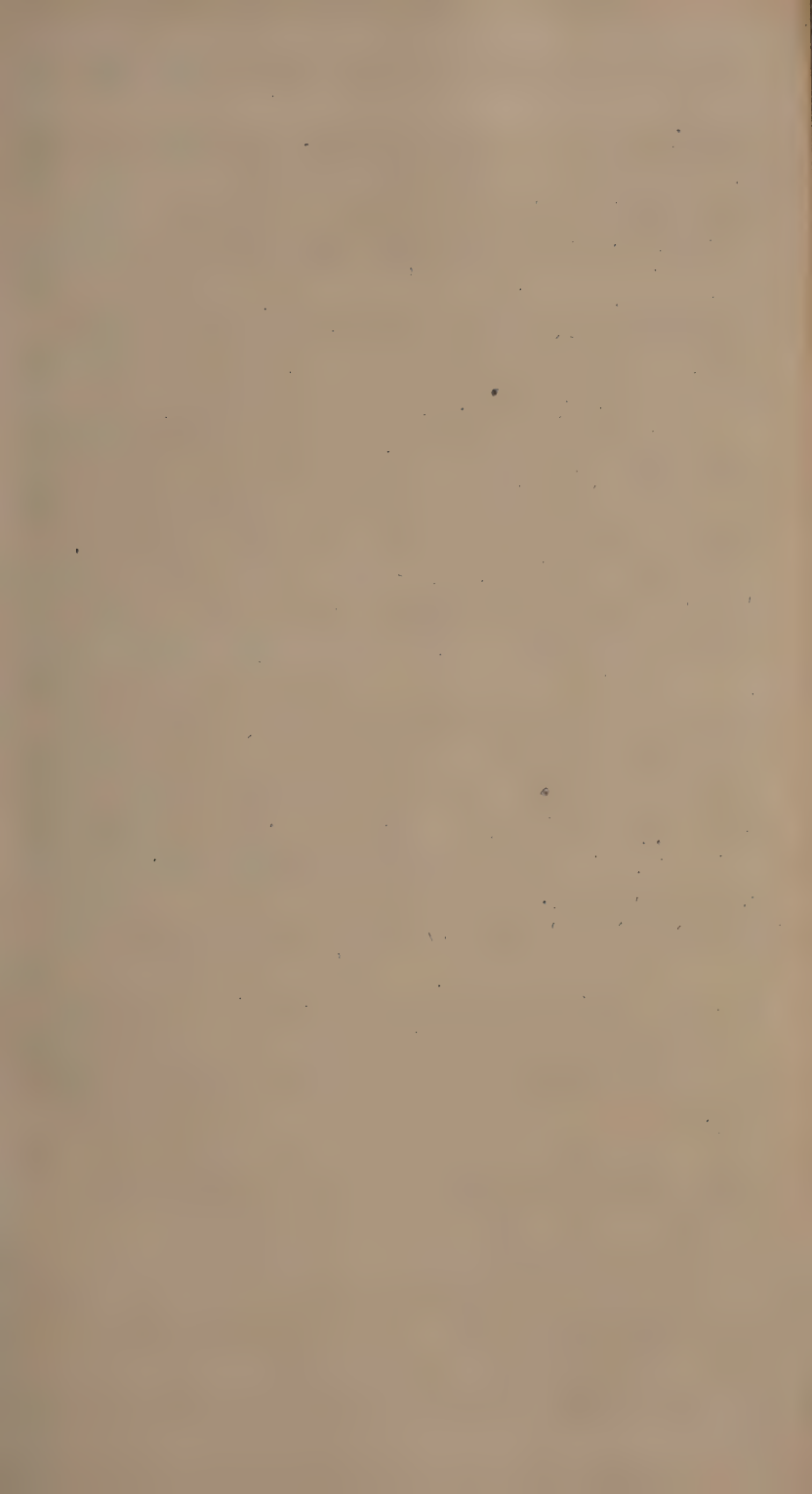
The causes which give rise to this species of nephritis are, external contusions; strains of the back, acrids conveyed to the kidneys in the course of the circulation, violent and severe exercise either in riding or walking, exposure to cold, and sand or stone in the kidney. In some habits there is an evident predisposition to this complaint, particularly the gouty; and in these there are often translations of the disease to the kidneys, which very much imitate nephritis. In plethoric and inflammatory habits, an immoderate use of spirituous liquors may give rise to nephritis.

An inflammation of the kidney is attended with a sharp pain on the affected side, extending along the course of the ureter; and there is a frequent desire to make urine, with much difficulty in passing it; the body is costive, the skin is dry and hot; the patient feels great uneasiness when he endeavours to walk or sit upright; he lies with the most ease on the affected side, and is incommoded with nausea and vomiting, and there are often costiveness and colic pains.

In forming an opinion as to the event, we are to draw our conclusion from the severity of the symptoms, and from the quantity and appearance of the urine which is voided. When the disease is protracted beyond the seventh or eighth day, and the patient feels an obtuse pain in the part, has frequent returns of chilliness and shiverings, there is reason to apprehend that matter is forming in the kidney, and that suppuration will ensue. Remission of pain, fever, and tension, followed by a copious secretion of high-coloured mucous urine, universal diaphoresis, or a flow of blood from the hemorrhoidal veins, are favourable symptoms.

The terminations of nephritis are of the same nature as other inflammations. In slight and favourable cases, resolution may be obtained; but where the disease has continued with considerable violence for upwards of a week, suppuration may be apprehended. It may happen, however, that when the disease has been kept down by proper remedies, resolution may take place as late as the fourteenth day. It is marked by the disappearance of the fever and all the symptoms. Suppuration is marked by a remission of the pain, with rigors, throbbings, and hectic fever: in some cases, pus is discharged with the urine.

Nephritis has been known to terminate in gangrene; but this is



very rare. The occurrence is characterized by a sudden cessation of the pain after it had long resisted every remedy ; with sinking of the pulse, cold sweats, &c., as in other cases of gangrene.

Another termination of the disease is scirrhus, or enlargement and hardening of the kidney. Sometimes nephritis gives rise to gravelish complaints, probably from extravasated blood, or lumps forming a nucleus.

Dissections of nephritis shew the usual effects of inflammation on the kidney, and they likewise often discover the formation of abscesses which have destroyed its whole substance. In a few instances the kidney has been found in a scirrhous state, and prodigiously enlarged ; in other ways nearly wasted away.

In the cure of nephritis our chief reliance is to be placed on blood-letting, both general and local, assisted by fomentations, the use of a warm bath, and emollient clysters, &c.

On the first coming on of this complaint, a quantity of blood proportionable to the severity of the pain, and the age and habit of the patient, ought immediately to be taken away : and if the first bleeding does not afford considerable relief, the operation should be repeated on the same day, or on the next at farthest. Topical bleeding, with several leeches over the kidney affected, may afterwards be necessary.

After bleeding, we may advise flannel cloths wrung out of a warm decoction of emollient herbs, or a bladder filled with warm water, to be kept constantly applied over the part which is painful : and by way of internal fomentation, an emollient clyster may frequently be injected. The patient is at the same time to be directed to drink plentifully of mild diluents, such as barley-water, thin gruel, whey, linseed or marshmallow tea, &c.

The nitrate of potass is a good antiphlogistic medicine in most internal inflammations : but in nephritis its use has been supposed to be very doubtful, on account of its passing quickly by the kidneys, and irritating them.

The intestines are to be emptied by gentle aperients*, employed as frequently as the occasion may require, in addition to emollient clysters, as constipation ought carefully to be guarded against.

Should these means have been adopted without affording relief

* 1. R Mannæ Optim. ℥ss.
Potassæ Tartrat. ʒij.
Aq. Fervent. f. ℥iss.

Tinct. Sennæ, f. ʒj. M.
ft. Haustus.

Vel,
2. R Ol. Ricini, f. ʒj.
Mucil. Gum. Acaciæ,
Aquæ Fœnicul. aa f. ℥ss.

Tinct. Jalap. ℥ xxxv. M.
ft. Haustus.

* 1. Take Manna, half an ounce.
Tartrate of Potass, three drachms.
Warm Water, one ounce and a half.

Tincture of Senna, one drachm.
Mix them for a draught.

Or,

2. Take Castor Oil, one ounce.
Mucilage of Gum Acacia,
Fennel Water, of each half an ounce.

Tincture of Jalap, fifty drops.
Mix them as a draught.

to the patient, he ought then to be put frequently into a warm bath, continuing him in it for about fifteen minutes each time. The remedy will produce a powerful determination to the surface of the body, and greatly increase the action of the cutaneous exhalants.

Mild diaphoretics, such as the saline medicine combined with nauseating doses of tartarized antimony, will at the same time be proper.

When the febrile symptoms do not run high, and the inflammation has been subdued by a vigorous adoption of antiphlogistic remedies, opiates may be used occasionally to soothe pain, and may be added to the clysters. In nephralgia they are very important remedies, but not in pure nephritis.

In nephritis the application of blisters would be improper. They are apt to affect the urinary organs and vessels, and to occasion much irritation, and would consequently increase the inflammation. Sprinkling the surface of blisters with camphor is said to prevent any irritation of the kidneys: but never having observed such an effect, I will not pretend to attest its efficacy. Rubefacient liniments over the region of the kidney may perhaps be of some service.

It has been mentioned that a difficulty of making water is one of the symptoms attendant on this disease: to obviate it, some practitioners give heating diuretics, such as turpentine, balsams, &c. The practice seems very improper, and ought not to be followed, as it will be more advisable to apply warm fomentations over the region of the bladder and kidney, to eject emollient clysters with an addition of opium, and to make the patient drink frequently of warm diluents.

A decoction of the dried leaves of the peach-tree (*Amygdala Persica* Linn.) prepared as mentioned under the head of Hæmaturia, and drank in the quantity of a pint a day, has been found a very useful remedy in many cases of nephritis.

When the urine deposits a quantity of muco-purulent matter, shewing that the inflammation has terminated in a suppuration, or that an ulcer has already formed in the kidney, balsamics and detergent medicines, with a long continued course of chalybeate waters, but more particularly those of the Bristol wells, will be very proper. The cinchona bark may also prove serviceable.

One of the best medicines, however, with which I am acquainted, in such cases, is the uva ursi, which may be given in doses of half a drachm, or a drachm, three times a day. I have tried it in several instances, and in general with a happy effect.

Where an inflammation of the kidney has arisen from the stimulus of a stone or large piece of gravel lodged there, we should have recourse to the exhibition of anodynes and opiates in considerable doses, both by the mouth and by clyster, together with the other means advised under these particular heads.

In renal hæmorrhage, as well as in most other internal hæmorrhages, alum as an astringent, and the acetate of lead and

Irritation of the Bladder.

This disease often makes its appearance during the latter stages of Gonorrhoea. The patient is annoyed by a frequent desire to make water. This symptom at first becomes so urgent as to have an inclination to empty the bladder every ten or 15 minutes, the pain is in proportion to the quantity of water.

This disease is often mistaken for Stone in the Bladder but when there is a Stone the pain is greater after voiding the water, whereas in irritable Bladder the pain is less.

It may proceed to Ulcer. Sometimes this disease goes on to produce ulceration of the Bladder, the urine will then be mixed with blood and there will likewise be a discharge of bloody mucus. It also goes on to produce Cancer of the prostate Gland. Irritable is one of the most painful and torturing diseases known, and it may be brought on by very slight causes, retaining the urine from motives of delicacy &c. From Dissection of those who have died of irritable bladder, the mucous membrane has been found extremely vascular, as florid as red velvet.

In the treatment of it nothing can be done without rest. Opium and the lay: Potassa may be given with the bowels kept open by purgatives, rather too much recommended. A blister may be applied to the perineum as a counter irritant. and a short Catheter must be kept in the urethra to allow the urine to run off and stop from the ureters.

In Mucous diseases of the Bladder the Ball. Capivi is an excellent remedy 10 drops three times a day in wine.

digitalis as sedatives, are the remedies chiefly to be depended upon.

In nephritis every kind of food which is of a stimulating nature ought carefully to be avoided, and such only as is lenient and nutritive should be used, as every thing which is heating or acrid proves a stimulus to the kidneys. Emollient and thin liquors should be drank plentifully, and the patient should take frequent small draughts of them notwithstanding the vomiting, as nothing so safely abates the inflammation, after proper evacuation by bleeding as copious dilution.

Those who are liable to frequent returns of the disease, or to obstructions in the kidneys, ought carefully to avoid getting wet in the feet; as likewise all exposures to cold: they ought to lie on a mattress in preference to a feather-bed; their exercise should be moderate, and they should use no kind of wine which abounds with tartar.

CYSTITIS, OR INFLAMMATION OF THE BLADDER.

TENSION and pain over the pubes, with a frequent desire of making water, difficulty in voiding it, or a total suppression, together with tenesmus and pyrexia, mark this disease.

It is seldom a primary affection, but arises in consequence of inflammation in the neighbouring parts. It is sometimes, however, occasioned by a suppression of urine and consequent over-distention of the bladder, or by a stone of considerable size lodged in it.

The treatment advised in nephritis, or in ischuria and dysuria, to which I beg leave to refer the reader, will be proper here, except that we should not give liquids in great quantities, lest we distend the bladder beyond what it is capable of bearing.

In consequence of previous inflammation from some exciting cause, the mucous membrane of the bladder now and then becomes thickened, indurated, or ulcerated; and a considerable quantity of mucus mixed with pus passes off with the urine, giving to it the appearance of whey, and now and then blood is discharged.

In the treatment of such cases, we are to prevent any collection of fæces in the rectum by means of some cooling laxative taken from time to time; to abate pain by small doses of opium, and to inject the bladder two or three times a day with warm water, or some emollient decoction, by means of an elastic gum catheter with a bottle of the same material fitted to it, or that modern apparatus termed the *vesicæ lotura*, from which mode of treatment very great relief and benefit* have been obtained in cases of

* See Account of the *Vesicæ Lotura* by Mr. Jesse Foot.
See Cases of Diseased Bladder, by Mr. Wadd, p. 16.

ulcerated bladder, or where there has been a purulent sediment in the urine, with a frequent desire to void it. Some of the detergent balsams, such as the copaiba, terebinthina Canadensis, &c., may be advisable. Where we have reason to suspect scirrhus, the extractum conii, or hyoscyami, will be proper medicines in addition to the former.—See Diseased Prostate.

PERITONITIS AND HYSTERITIS.

INFLAMMATION of the peritoneum, and also that of the uterus, as belonging to the class of pyrexia, ought properly to have succeeded cystitis: but as they occur most frequently to women after delivery, they have been placed among the diseases of the puerperal state.

Peritonitis is, however, by no means an uncommon disease, independent of parturition, and of course is not unfrequently met with in males as well as females. In these instances the disease is produced by an exposure to cold when the body has been heated by severe exercise, and the inflammation now and then seizes the stomach, intestines, or liver, and then is translated to, and principally occupies, the peritoneum, as happened in a case which lately came under my observation, and which proved fatal by a high degree of effusion taking place in the cavity of the abdomen, notwithstanding that active depletory means, both by general and topical bleedings, were early resorted to.

PODAGRA, OR GOUT.

HEREDITARY, arising without an apparent external cause, but preceded generally by an unusual affection of the stomach, pyrexia, pain at a joint, particularly of the great toe, infesting the articulations of the feet and hands, returning at intervals, and often alternating with affections of the stomach, or other internal parts, are assigned by Dr. Cullen as the characteristics of gout.

A morbid action of a peculiar or specific nature seems to take place in the disease.

Of the gout there are four species or varieties: the regular, atonic, misplaced, and retrocedent.

The only disorder for which gout can possibly be mistaken is the rheumatism; and cases may occur wherein there may be some difficulty in making a just discrimination; but the most certain way of distinguishing them will be to give due consideration to the predisposition in the habit, the symptoms which have preceded, the parts affected, the recurrences of the disease, and its connexion with the other parts of the system; which circumstances are usually different in the two diseases.

In the gout the pains generally attack the small joints, and are

at the same time less inclined to shift; but when they do, they usually seize the corresponding limb, or some of the viscera; the parts are more red and swollen than in rheumatism, and the dyspeptic symptoms, which rarely precede rheumatism, are present in a considerable degree for some days prior to the taking place of a fit of the gout.

Rheumatism and gout are, however, sometimes combined; in which cases, a diagnosis is neither necessary nor possible.

The attacks of gout are chiefly in the spring of the year, and the beginning of winter, and the disease seldom appears at an earlier period of life than from five-and-thirty to forty. When it does, it may be presumed to arise in general from a hereditary predisposition, susceptibility, or constitutional bias.

Gout chiefly attacks men, and particularly those who live well and lead a sedentary life; those who are addicted to literary pursuits; those who keep late hours, or who are in the decline of life: but we meet with it now and then in females of a full and robust habit of body. Men who are employed in constant bodily labour, or who live much upon vegetable food, as well as those who make use of wine and other fermented liquors very sparingly, are not often afflicted with the gout. Eunuchs are seldom attacked by it.

The exciting causes of the gout may be divided into those which induce a plethoric state of the body, and those which occasion weakness of the body in general, or of the stomach in particular. Among the latter may be enumerated intemperance of every kind, late hours, intense application to study, long want of rest, much grief or anxiety of mind, great sensuality, long continued fatigue, exposure to cold, particularly by getting wet in the feet, too free a use of acidulated liquors, a sudden change from a full to a spare diet, excessive evacuations, accumulated acidity in the *primæ viæ*, violent passions of the mind, &c. A full diet of animal food, ragouts, and rich sauces, with a free use of fermented liquors, such as beer, ale, porter, and wine, together with indolence and inactivity, are the causes which give rise to corpulency and a full habit of body; hence the frequency of gout among the rich.

Dr. Darwin mentions, it is a common opinion that this disease is as frequently owing to gluttony in eating, as to intemperance in drinking fermented or spirituous liquors; but that he has never seen any person afflicted with the gout who has not drank freely of fermented liquors, as beer or wine; though as the disposition to all the diseases which have originated from intoxication is in some degree hereditary, a less quantity of spirituous potation will induce the gout in those who inherit the disposition or constitutional bias from their parents.

A fit of the gout is sometimes brought on by severe exercise or walking far, and sometimes by a sprain; and that the disease occasionally takes place from a hereditary predisposition or suscepti-

bility is beyond doubt, as youths of a tender age, and females who have been remarked for their abstemiousness, have been attacked with it.

A predisposition to become affected with this and some other diseases, particularly scrofula and mania, on the application of exciting causes, does certainly exist in the human race. In some instances it is more strongly marked than in others, but predisposition of itself may be inert and insufficient to produce disease: it requires for this purpose the application of an exciting cause. Such is the light in which we should view what are termed hereditary predisposition and hereditary disease.

A peculiar saline acrimony existing in the blood, in such a proportion as to irritate and excite to morbid action the minute termination of the arteries in certain parts of the body, has been assigned by some physicians as the proximate cause of gout. Dr. Cullen supposed it to be a loss of tone in the extremities of the system, while it is in a vigorous and plethoric state, and the energy of the brain still retains its vigour. Dr. Darwin thought that it arises from the inirritability or defective irritation of some part of the system, the consequence of which is torpor and inflammation.

The opinion most generally entertained by modern physicians is, that the gout proceeds from an accumulation of humours in the relaxed vessels of the ligaments and tendons of the joints; but concerning the nature of those humours, different opinions are entertained, some looking on them as a morbid secretion, and others considering them to be mere blood.

The gout has appeared in some instances to be under the influence of the imagination; for terror suddenly excited, such as by the house of the patient taking fire, has been known in a few minutes to restore the use of his limbs, and admit of his escape with great ease.

A paroxysm of regular gout sometimes comes on suddenly, without any warning; at other times it is preceded by an unusual coldness of the feet and legs, a suppression of perspiration in them, and numbness; or by a sense of pricking along the whole of the lower extremities; and with these symptoms the appetite is diminished, the stomach is troubled with flatulency and indigestion, a degree of torpor or languor is felt over the whole body, great lassitude and fatigue are experienced after the least exercise, the body is costive, and the urine pallid. Some previous affection of the stomach or dyspepsia is almost constantly met with.

On the night of the attack the patient perhaps goes to bed in tolerable health, and after a few hours is awakened by the severity of the pain, which has affected either the joint of the great toe, the heel, calf of the leg, or, perhaps, the whole of the foot; and this becoming at length still more violent, is succeeded by rigors and other febrile symptoms, together with a severe throbbing and inflammation in the part. Sometimes both feet become swelled and

inflamed, so that neither of them can be put to the ground, nor can the patient endure the least motion without suffering excruciating pain.

Towards morning he falls asleep, and a gentle sweat breaks out, and terminates the paroxysm, a number of which constitutes what is called a fit of the gout, the duration of which will be longer or shorter, according to the disposition of the body to the disease, the season of the year, and the age and strength of the patient.

When the paroxysm has thus taken place, although there is an alleviation of pain at the expiration of some hours, still the patient is not entirely relieved from it, and for some evenings successively he has a return of both pain and fever, which continue with more or less violence until morning.

In time the paroxysms however prove more mild every day, till at length the disease goes off either by perspiration, increased flow of urine, or some other evacuation; the parts which have been affected becoming itchy, the cuticle falling off in scales from them, and some slight degree of lameness remaining.

At first an attack of gout occurs perhaps only once in two or three years; it then probably comes on every year, and at length it becomes more frequent, and is more severe and of longer duration each succeeding fit.

It may be stated that gout, with little exception, acquires strength with each returning fit, both as to the number of parts which it attacks, and as to the duration and degree of suffering; and it does not, like some chronic diseases, wear itself out by repetition, and yield to the power of time. A premature old age comes on, and together with painful and crippled limbs, the nervous system is so enfeebled, that both mind and body become less equal to sustain the conflict.

In the progress of the disease various parts of the body are affected, and translations take place from one joint or limb to another; and after frequent attacks, the joints lose their strength and flexibility, and become so stiff as to be deprived of all motion. In some instances little swellings, of a very hard nature, arise in the joints of the fingers, to which a late writer* has applied the title of nodosities. Nephritic affections of the kidneys arise also, calculi are produced, and concretions, of a chalky nature, are formed upon some of the joints, particularly on those of the fingers, owing to a deposit of the same kind of matter in them. The fluid which is so effused, is at first white; by degrees the watery and serous particles are absorbed, leaving a substance which is soft and clayey, and that afterwards becomes hard and friable, and when put into acids is perfectly soluble.

This effusion occurs not only during fits of gout, but likewise in the intervals; and as the extremities, particularly the hands and feet, are the principal seat of gout, it is there that the greatest

* See Dr. Haygarth's Clinical History of Diseases.

accumulations of chalk take place. Though this process is usually preceded by, and accompanied with inflammation, the chalk is never enclosed in a cyst like pus in an abscess. It lies usually in the cellular membrane, in the bursæ mucosæ, or in the cavities of the joints.

The chalky liquid, when first secreted, gives to the finger, upon pressure with it, the feeling of a fluctuation, and cannot be distinguished from the ordinary serous effusion of gout; but unfortunately the absorbents do not take up the chalky particles. The consistence of the liquid therefore becomes thicker and thicker, till at last nothing remains but a hard mass. It requires, however, repeated effusions to form any gouty mass of chalk, and the consistence will depend upon its age and the activity of the absorbents. By repeated paroxysms, the quantity at last accumulated becomes considerable, and seriously augments the sufferings of the patient; by its bulk greatly distends the surrounding parts, and obstructs the motion of the tendons and joints, often occasioning a complete ankylosis. The cutis, when distended to the utmost by frequent deposits of chalk, sometimes gives way, and an opening is formed, through which a quantity of it is evacuated.

It sometimes happens, that although a gouty diathesis prevails in the system, yet from certain causes no inflammatory affection of the joints is produced; in which case the stomach becomes particularly affected, and the patient is troubled with flatulency, indigestion, violent pain, loss of appetite, eructations, nausea, vomiting, and a peculiar sense of cold in the epigastric region; and these affections are often accompanied with much dejection of spirits, and other hypochondriacal symptoms. In some cases the head is affected with pains and giddiness, and now and then with a tendency to apoplexy; and in other cases the viscera of the thorax suffer from the disease, and palpitations, faintings, cramps, and asthma, arise. This is what is called atonic gout.

It likewise happens sometimes, that after the inflammation has occupied a joint, instead of its continuing the usual time, and so going off gradually, it ceases suddenly, and is translated to some internal part. The term of retrocedent gout is applied to occurrences of this nature. When it falls on the stomach it occasions nausea, vomiting, anxiety, or great pain, with a sensation of coldness in the epigastric region; when on the heart, it brings on syncope; when on the lungs, it produces an affection resembling asthma; and when it occupies the head, it is apt to give rise to apoplexy or palsy.

In retrocedent or repelled gout, we generally find the disease on the stomach producing violent pain, sickness, vomiting, &c., and patients have died in a few minutes after such an attack: indeed the symptoms are so violent, that they generally think themselves dying. It seems closely connected with a spasmodic affection of the stomach.

A third species of irregular gout is the misplaced; which implies

where the gouty diathesis, instead of producing the inflammatory affections of the joints, occasions an inflammatory affection of some internal part, and which appears with the same symptoms that attend inflammations of those parts from other causes.

All occurrences of this nature, as well as of the two former, are to be regarded as attacks of irregular gout, and are to be guarded against as much as possible. Cases of misplaced gout are not very frequent.

The prognosis in gout may be considered as favourable when the visceral organs are sound in structure, and not materially disturbed in their functions; when the tongue becomes moist and clean; where there is a return of the natural appetite; the *fæces* recovering a healthy appearance; the urine ceasing to deposit sediment, and at the same time losing its high specific gravity; when the nervous system becomes tranquil, and when the local sensations readily yield in their severity to remedies; the local inflammation soon abating, and not shewing a disposition to quick transference from one part to another; or, if it be fugitive, not fixing severely on new parts. In a regular fit of the gout there is seldom any great danger; it is only where the disease appears under an irregular or repelled form that danger arises, and in which either the stomach, heart, lungs, or head become affected. A quick transference of severe inflammation from one part to another, joined with painful sympathy of the stomach, or the head, or with exquisite sensibility of the whole nervous system, are to be considered among the unfavourable signs in gout. In some cases the whole system becomes weak and languid, dyspepsia and syncope supervene, and the disease at last terminates in palsy, asthma, or dropsy, appearing most commonly in the form of hydrothorax.

In youth the disease admits more readily of alleviation than in an advanced period of life; and its attacks may be rendered milder when acquired, than when it proceeds from an hereditary predisposition: moreover, the fit is generally shorter in proportion to the violence of the febrile symptoms and the length of intermission.

When the constitution has suffered great ravages from frequent and severe attacks of the gout, various morbid affections of the viscera are to be observed on dissection; calculi of different sizes and colour are to be found in the kidneys; and on examining the joints which have been rendered stiff and immoveable, it appears as if their motion had been destroyed by the formation of chalky concretions of a similar nature with those lodged in the kidneys. These calculous concretions, or chalk-stones, as they are called, are supposed to be the consequence of local diseased action, and not of systematic origin; or, in other words, that they are only the effects, and not causes of gouty action.

In a paper read before the Royal Society, June 22d, 1797, Dr. Wollaston demonstrated, that the concretions which form on the joints of gouty persons are composed of the lithic acid and soda, forming a compound salt, the lithiate or urate of soda.

Dr. G. Pearson likewise, in a paper read before the same society in December, 1797, in which he relates the results of the analyses of upwards of three hundred urinary calculi, particularly mentions the existence of this acid in arthritic concretions. The word lithic, borrowed from the term lithiasis, he recommends to be changed to that of uric. Fourcroy also about the same time discovered the uric acid in these concretions.

Notwithstanding the many remedies which have been highly extolled at different times for the cure of gout, it is a fact well established, that not one which has yet been offered possesses any such power; and all that can be done with safety to the patient is to conduct him through the paroxysm when it has once commenced, afterwards by abstaining from the remote causes, such as full living, acescent food, strong liquors, &c., and making use of gentle daily exercise, to render recurrences of the disease less frequent and more mild than they otherwise might be. In short, great temperance and regular moderate exercise are the most likely means to prevent severe and frequent attacks.

During a paroxysm of the gout, if the attack is severe, it may be necessary to confine the patient in bed, keeping the inflamed parts of a moderate temperature. The confinement of morbid heat by covering of a very warm nature, might only serve to increase pain and prolong the disease. He is at the same time to be kept as quiet and free from all irritation as possible; and as gouty people are generally captious from the severity of the pain which they suffer, they should be solaced, and not be thwarted. If the patient is young and plethoric, he should abstain from all sorts of animal food, aromatics, and fermented liquors, living on water-gruel, panado, sago, arrow-root, and other farinaceous substances. His drink should be some mild diluting beverage, such as barley-water, toast and water, or tea. In elderly people, where the tone of the stomach is weak, or where the patient has been in the constant habit of using strong liquors, and of living principally on animal food, a more generous diet, with a moderate use of wine, may be allowed: and as Madeira and Sherry wines are the least apt to become acid on the stomach, they ought therefore to be used in preference to any other kind.

The fostering of arthritic inflammation by the topical use of increased temperature, or covering the parts with flannel, &c., together with the internal employment of stimulant medicines, with a view to obviate its retrocession, and ensure its final extinction, on the part affected, is supposed, by Dr. Kinglake*, to be a very erroneous practice, and as repugnant to the indication of relief furnished by every constitutional feature of the disease.

He tells us, that observation and reflection have forced on his conviction the *fact*, that however loose the analogy may be

* See his Treatise on the Gout.

between the respective proximate causes of ordinary phlegmonous and arthritic inflammations, the resemblance is sufficiently close in the degree of concomitant temperature. In both, the vascular actions of the system, and of the part affected, generate a morbid excess of heat, alike referrible to distempered conditions of motive power. Impressed with the persuasion, that with regard both to inordinate temperature, and to its general as well as topical manifestations, a radical similitude subsists between these nominally different inflammations, it has appeared to him strictly warrantable to institute a perfectly similar plan of cure, viz. that of reducing heat by keeping cloths wetted with cold water constantly to the parts affected. In support of the efficacy of this plan, he recites several cases which were successfully treated by topically abstracting the stimulus of heat from the parts by water, and such other cold media.

We are further told by him, that he thinks himself justifiable in drawing the following inferences: viz. that a high temperature, whether the cause or effect of the morbid conditions of vital power, which proximately constitute gout, is safely and speedily controllable by the simple application of cold water; that the prevailing opinion relative to the critical nature of that disease on the extremities is liable to much distrust; that the local deposit is not, as commonly supposed, a particular preponderance and detention of the constitutional disorder, but that it originates in the parts themselves, and is thence distributed by associated influence over the system; and lastly, that the longer the local affection endures, the greater probability there will be of morbid sympathies being generated and established on the vital organs, which may terminate in rapid and painful death.

Such is Dr. Kinglake's theory; and being somewhat vague, is not, I think, likely to make many proselytes. Popular prejudice is, moreover, very strong against the remedy recommended by him; and therefore the young practitioner in particular should be cautious in advising it.

It is indeed well known that various diseases of the head, such as headach, vertigo, mania, epilepsy, apoplexy, and great depression of spirits, in many instances, immediately, or soon succeed the recession of inflammatory gout from the extremities; and a late writer of eminence has recorded* two cases where immersion of a gouty foot in water produced instant relief from the pain, and a proportionate abatement of the inflammation, but which was followed in a few hours by hemiplegia, shewing clearly the danger of adopting Dr. Kinglake's plan.

The application of cold water in gouty paroxysms has not however originated with Dr. Kinglake, for it is a mode of treatment noticed by Hippocrates and Celsus, and even by some modern

* See Elements of Pathology and Therapeutics, p. 396, by Dr. Parry.

writers*. It is therefore only the revival of a practice which has frequently been brought forward, and again abandoned, from its being somewhat hazardous. If the cooling, or refrigerant treatment is *ever* adopted, I think it should not be ventured upon until the stomach and other viscera have shewn indubitable signs of performing their functions with their proper and accustomed energy, and till the local inflammation has existed for a day or two; and even then, no greater degree of cold should be applied, or be continued for a longer duration, than will be sufficient to subdue the local inflammation. If, notwithstanding this precaution, symptoms of constitutional disturbance should arise, we ought then immediately to remove the refrigerant application, and endeavour to relieve the torpor by suitable stimulants. In no case should the application of cold to the extremities be resorted to without keeping the stomach all the time in a moderate state of activity.

Another physician† tells us, that with regard to external applications in the gout, none out of the many which he had tried, proved so effectual as steam, and occasionally confining the inflamed part in a rarer atmosphere; for which purpose he recommends a steady use of the air-pump vapour-bath every other or third day. This treatment, we are informed, has not only the happiest effects on the paroxysms while present, but renders subsequent ones more mild, protracting likewise the intervals between them.

Gout not being however a mere local complaint, as Dr. Kinglake and some others seem to imagine, but really a constitutional one, local applications, when resorted to, should, I think, always be joined with internal remedies. Of the two external applications just mentioned, the latter seems to be the safer, although it may not probably remove or carry off inflammation in the limb so quickly as the former.

Instead of cold applications to parts affected with gouty inflammation, a modern writer‡ is of opinion much benefit may be derived from the medium of grateful warmth, by constantly moistening them with a tepid fluid. This may be done either by a sponge, or, perhaps, more effectually by cloths wetted in it, renewing them as often as they become dry. The fluid should be aqueous; and for the purpose of rendering it more evaporable, a portion of either æther or alcohol|| may be conjoined with it.

* See Mr. Rigby's Treatise on Animal Heat. — Medical Observations, vol. vi.

† See Dr. Blegborough's Communications on Gout, vol. xii. p. 62, of the Medical and Physical Journal.

‡ See Treatise on the Gout, by C. Scudamore, M.D.

|| 1. R Alcoholis, f. ℥viij.
Misturæ Camphor. f. ℥xvj. M.
ft. Lotio modice tepefacta ab additione pauli
aquæ callidæ, et partibus affectis constanter
adhibeatur.

|| 1. Take Alcohol, eight ounces.
Camphor Mixture, sixteen ounces.
Mix them. This lotion is to be made luke-
warm by the addition of a small quantity
of warm water, and to be applied con-
stantly to the parts affected.

The temperature of the application should not be under 75, nor exceed 85; for if either hot or cold, the intention of the remedy is frustrated. The superincumbent covering ought to be light and cool.

The drying of the parts will be the detachment of stimulant heat, and the cooling effects of the reduced temperature will be felt on the inflamed surface. The refrigerating influence produced by incessantly moistening the inflamed part with a tepid fluid, and leaving it to dry by evaporation, will certainly be powerful; and I have experienced it to be a much safer method of detaching heat than by the application of cold, as advised by Dr. Kinglake.

Blistering, sinapisms, stinging with nettles, burning with moxa, as practised in the East Indies, rubbing the part with camphorated spirits, pediluvium of simple water, a tepid bath of water and muriatic acid, in the proportion of one ounce to a gallon of water, and covering the part with oil-skin, are remedies which have been proposed for bringing a fit of the gout sooner to a termination, when it has been very tedious; but they are all attended with some risk, and therefore ought to be avoided.

Percussions and frictions, succeeded by compression with a flannel roller, have been reported* to have proved as beneficial in gout as in rheumatism.

To lessen the violence of the inflammation in very severe paroxysms of the gout, topical bleeding has sometimes been employed, and in the young and plethoric with occasional advantage no doubt; but we should never think of recommending it to the aged and infirm. With respect to drawing blood from the system, this would only be justifiable in those cases where either the lungs or head are violently affected from misplaced or translated gout. Notwithstanding the prejudice which has prevailed against a use of the lancet in gout, some few physicians (among whom is the late Dr. Heberden) have given it as their opinion, that bleeding is both necessary and advisable where the inflammation is considerable and the pains are very acute; and they seem to think that it will weaken the tone of the vessels less, and not be so likely to cause a relapse, as by suffering the violence of the inflammation to continue without a check. As gout seldom, however, occurs but in habits previously debilitated by intemperance, indolence, sensuality, or the like causes, the nicest judgment and strictest caution are requisite in carrying this portion of the antiphlogistic plan into execution.

In arthritic affections gentle sudorifics† are sometimes of ser-

* See Observations on an Expeditious Mode of curing Gout in the 48th No. of the Edinburgh Medical and Surgical Journal, p. 432.

† 2. R Pulv. Antimonial. gr. ij.
Ammoniae Subcarbon. gr. viij.

Confect. Rosæ, q. s. M.
ft. Bolus, 3tiis vel 4tis horis sumendus.

† 2. Take Antimonial Powder, two grains.
Subcarbonate of Ammonia, eight grains.
Confection of Roses, a sufficiency to form a bolus, which may be taken every three or four hours.

vice: they should not however be selected from the stimulant or aromatic kind; nor be given in a large dose to excite profuse sweating, but only so as to promote and keep up a gentle diaphoresis. Antimonials, or ipecacuanha in small doses, frequently repeated, or volatile salines, assisted by diluting liquors and temperate warmth, may be employed. In habits not debilitated, the common saline draught, with a small quantity of peppermint water, and about eight or ten drops of the vini antimon. tartarizati, may be substituted for the volatile saline.

In gouty paroxysms, where costiveness attends, it will be necessary to have recourse to cathartics, but particularly at their accession; and the most proper possibly may be a solution of the sulphate of magnesia in peppermint water, or rhubarb conjoined with a grain or two of the submuriate of mercury. A modern writer* on this disease says, that calomel, joined with antimonial powder, compound extract of colocynth, and soap, is a good purgative in gout; where a combined and continued action of the bowels and kidneys is required, magnesia and sulphate of magnesia, conjoined with acetum colchici, will be most appropriate. Ever since the days of Sydenham, physicians seem to have been afraid of prescribing purgatives in gout, under the idea of their being likely to prove injurious; but that active purgatives may be employed in gouty paroxysms with perfect safety and most decided advantage, both experience and attentive observation have fully confirmed.

Where gout is combined with anasarca swellings, as sometimes happens, we may employ cathartics, joined with diuretics, so that the exhalant vessels of the alimentary canal and the secreting function of the kidneys be stimulated to increased action at the same time. With this view, probably, some have employed ela-

* See Treatise on Gout, by Charles Scudamore, M.D.

Vel,
3. R Succī Limon. f. ʒss.
Ammonia Subcarbon. q. s. ad ejus
saturationem; dein adde

Aq. Puræ, f. ʒvj.
Vini Antimon. Tart. ℥ x.—xv.

Syrup. Cort. Aurant. f. ʒj. M.

ft. Haustus, 4ta vel 6ta hora adhibendus.

Vel,
4. R Liqueor. Ammon. Acet. f. ʒiij.

Misturæ Camphoræ, f. ʒxi.

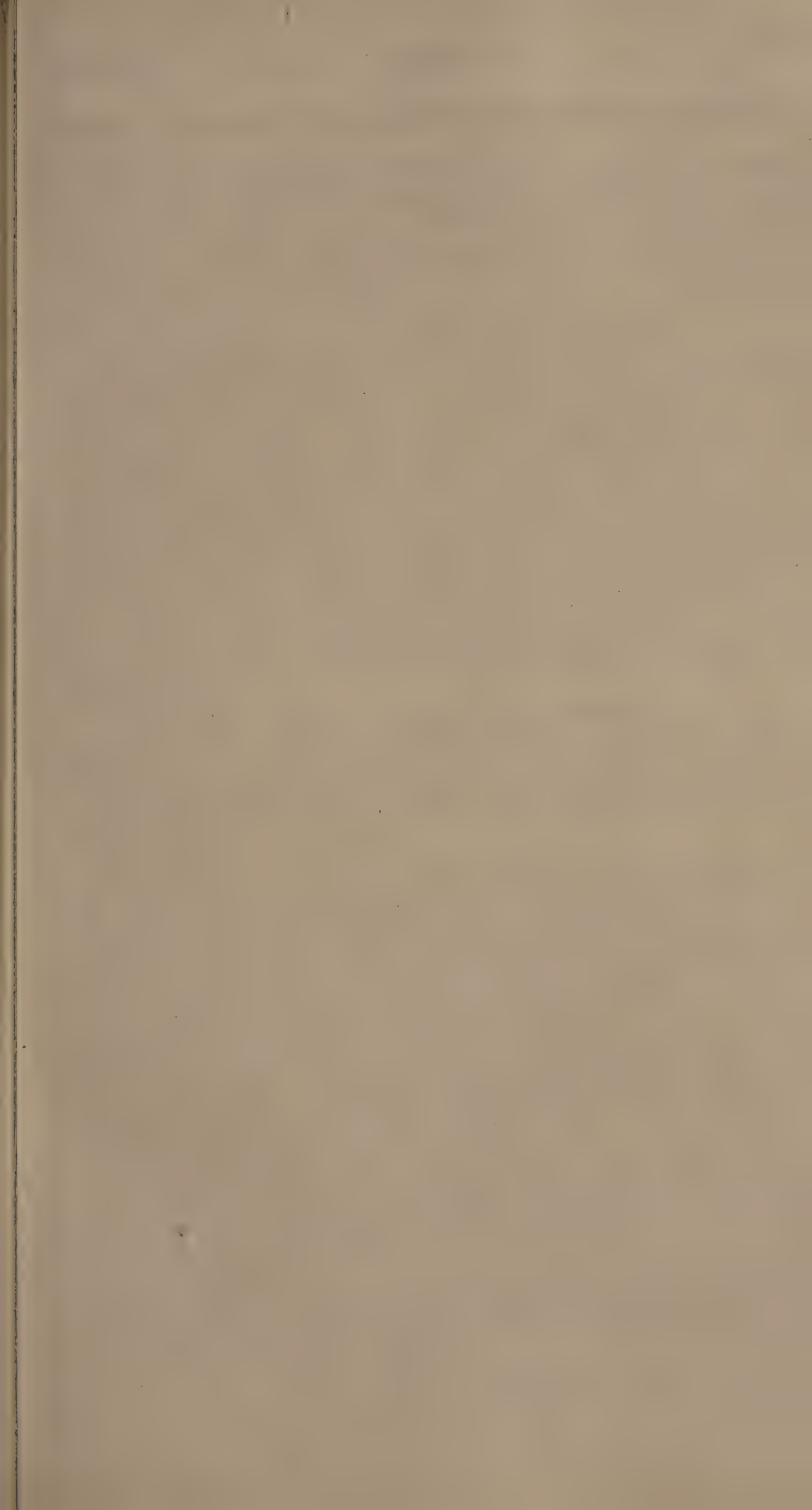
Vini Antim. Tart. ℥ xij.

Syrup. Cort. Aurant. f. ʒj. M.

ft. Haustus.

Or,
3. Take Lemon Juice, half an ounce.
Subcarbonate of Ammonia, a suf-
ficiency for saturation.
Then add
Pure Water, six drachms.
Wine of Tartarized Antimony,
fifteen to twenty-two drops.
Syrup of Orange Peel, one
drachm.
This draught is to be given every four or six
hours.

Or,
4. Take Solution of Acetate of Ammonia,
three drachms.
Camphor Mixture, eleven
drachms.
Wine of Tartarized Antimony,
eighteen drops.
Syrup of Orange Peel, one
drachm.
Mix them for a draught.



terium. It has been recommended by Dr. Sutton* in conjunction with opium.

If the patient is incommoded by acidity in the stomach during a paroxysm of gout, which when much accumulated in the primæ viæ will sometimes prove alone sufficient to excite it, and always powerfully concurs with other causes, a little magnesia may be taken once or twice a day to correct it. However much the stomach may be oppressed with putrid sordes, we should never venture to prescribe an emetic during the paroxysms.

From the severity of the pain in gout, opiates are sometimes resorted to; but when given in the beginning of gouty paroxysms, or where there is much inflammation, they often make them return with greater violence; but in those cases where the person is far advanced in life, has had frequent attacks, and where there is little or no inflammation, but merely restlessness and pain, they may be given with safety and advantage. About two scruples or a drachm of the *confectio opii*, taken at bedtime, may be preferable to the *tinctura opii*. Opium, taken in doses sufficiently large to ease pain and induce sleep, conjoined with antimony, and followed up by suitable and adequate purgatives, may, I think, be safely relied upon in all cases of gout, where there is no indication to forbid their use.

Where there exists an inflammatory diathesis, or a constipated state of the bowels, these should always be removed previous to the administration of opium, for the purpose of relieving the pain of gout. Where, from a peculiar idiosyncrasy, opium is found to disagree, we may substitute the use of *hyoscyamus*.

On the termination of a fit of the gout, a fresh paroxysm is to be delayed or rendered less violent by observing great temperance during the intervals; by avoiding the exciting causes of the disease; by moderate regular exercise every day; by avoiding cold; and by strengthening the body. In young persons, a cold bath, with moderate exercise afterwards, might probably be used with advantage during the intervals; but in elderly people, or where there is any inflammation of the joints, this remedy should never be recommended. Drinking half a pint daily of the double acidulated soda water possibly may have a good effect during the intervals of the paroxysms.

When any swelling and stiffness remain in the joints after the paroxysms have ceased, the stimulus of galvanism, or electricity, conjointly with the frequent use of the flesh-brush, may be attended with some benefit.

In consequence of frequent attacks of the gout, assisted, probably by some peculiarity of the patient's constitution or habit of body, little swellings or nodosities arise on or near the joints of

* See his tract on Gout.

the fingers; for the removal of which we are told by a late writer* that the following indications should be observed: viz. first to diminish the increased action of the vessels in the part by which the secretions of the morbid matter is performed; secondly, to promote a free perspiration of the part affected; and, thirdly, to correct the prevailing disposition to acidity in the *primæ viæ*, and in the system in general. To accomplish the first of these indications, leeches are to be applied to the tumefied part, their number being determined by the extent of the tumour and degree of the disease. To obtain the object of the second indication, the part is to be surrounded by a plaster of equal parts of simple diachylon and white soap, the adhesion of which to the skin becomes in a few days so slight as to admit the free exit of the perspirable matter through the skin, and which, being hindered from escaping farther, condenses on the surface of the plaster. To fulfil the third indication, a due attention is to be paid to the mode of living, by avoiding acid and acescent matters, and particularly such fermented liquors as have begun to manifest marks of acescency. To neutralize that acidity which being present in the stomach would secure its increase by acting as a ferment, it may be advisable to give the carbonate of soda in doses of from five grains to ten or fifteen in the day.

From the combined influence of these measures it appears, by Mr. Parkinson's account, that the utmost success that hope could look for has been obtained. The gradual diminution, and finally, the complete removal of nodosities which had existed for several months, have been thus procured; while those which had existed for some years have been so much reduced as to allow of considerable motion in joints which had become nearly immoveable.

Dr. Bardsley, physician to the Manchester Infirmary, mentions in his Medical Reports, that he looks on nodosities of the joints to be more nearly allied to chronic rheumatism than to gout. He has therein given the history of three cases of this nature, in the last of which, after a fair but unsuccessful trial of arsenic, cod-liver oil (a remedy much used in Lancashire), cinchona, guaiacum, and warm bathing, he had recourse to mercurial frictions, and by establishing and keeping up for some time a gentle salivation, with the assistance of tepid bathing, and topical bleedings by leeches, he effected a cure. From this instance he appears to think that mercury is capable of destroying the disease when in its incipient state.

When gout attacks a part in which there is an accumulation of chalk, and that is highly inflamed, the best application will be an emollient poultice, having previously well fomented with flannels wrung out in the decoctum papaveris made warm. If the

* See Observations on the Nature and Cure of Gout, &c. by Mr. James Parkinson.

cutis opens, yet leaves the chalky effusion confined by the cuticle only, a small puncture may be made. This will permit some portion of the fluid to escape, and more will run out into the poultice, by which means the tension will be removed. When the inflammation has subsided, greater freedom may be used. Some portion of the cuticle may then be removed to facilitate the discharge, and gentle pressure be employed.

During violent paroxysms, if the inflamed part is threatened with gangrene, the cataplasma effervescens (see Gangrene) may be substituted instead of the common emollient poultice, after well fomenting with a decoction of cinchona bark and bruised poppy-heads. The cinchona with aromatics, ammonia, wine, and opium, must be exhibited at the same time in doses proportioned to the danger and the powers of the stomach.

Where ulceration remains behind with chalk at the bottom, after the violence of the fit has subsided, in severe attacks, mild dressings only ought to be used: for as gouty habits are always irritable, stimulants, such as the hydrargyri nitrico oxydum, or any caustic application, might do mischief.

Masses of chalk are sometimes formed, however, on parts so inconvenient, or occasioning such deformity, that the patient is anxious to get rid of them even at some risk. On favourable occasions of this nature, where the constitution is sound, and the means recommended by Dr. Bardsley and Mr. Parkinson have failed to produce the intended effect, this may be obtained by destroying the skin with the potassa fusa. After the opening is formed, the sore is to be treated in the common manner.

In irregular, or atonic gout, where no inflammation of the joints is produced, although the gouty diathesis prevails in the system, but the stomach is affected with indigestion, flatulency, acid eructations, and pain, the patient ought not only to avoid all debilitating causes, but should employ proper means for strengthening the system in general, and the stomach in particular.

To support the tone of the system, a proper quantity of animal food ought to be taken, and that which is most nutritive and plain should be preferred. Gout, when in the system, and not regularly formed, requires an excess of animal food to drive it to the extremities, though in some measure it may aggravate the disease should a paroxysm ensue. With the same view a moderate allowance of wine will be proper; but all kinds of acescent wines, such as hock, claret, &c., ought to be avoided. Madeira and Sherry are those which will be most suitable. If the acidity in the stomach is perceived to be increased by a use even of these wines, weak brandy and water, without any addition of either sugar or lemon, may then be substituted.

To strengthen the stomach, aromatics, the cinchona bark*, and

* 4. R. Infus. Calumb. f. ʒiv.

* 4. Take Infusion of Calumba Root, four ounces.

chalybeates, such as the ferri subcarbonas, ferri sulphas, &c., may be given.—(See Dyspepsia.) Cinchona is not apt, when long continued, to produce atony in the stomach like bitters, and therefore a preference should be given to it over all others by persons of a gouty habit. Bitters and aromatics certainly give a transient relief; but if long persisted in, they usually produce a bad effect.

Some years ago the Portland powder, (a compound of bitter ingredients, viz. equal parts of the roots of round birthwort and gentian, of the leaves of germander and ground pine, and of the tops of the lesser centaury, all dried,) was much used by gouty people; but from having proved pernicious in many instances is now laid aside. Dr. Cullen mentions, in his Practice of Physic, that in every instance which he knew of the exhibition of the Portland powder being persevered in for any length of time, the persons who had taken it were indeed afterwards free from any inflammation of the joints, but they were soon affected with many symptoms of atonic gout, and all quickly after finishing their course of the medicine were attacked by apoplexy, asthma, or dropsy, which proved fatal. Dr. Murray, professor at Gottingen, reports in his Apparatus Medicaminum, that he found the Portland powder produce in many instances apoplexy, palsy, and acute disorders, together with difficulty of breathing, a dry cough, &c., which proved suddenly mortal. Dr. Darwin likewise tells us, in his Zoonomia, that two cases of a fatal termination, from a long continued use of bitter medicines, fell under his observation. The daily use of hop in our malt liquors must, he thinks, add to the noxious quality of the spirit in them, and contribute to the production of apoplexy, or inflammation of the liver. It has indeed been observed by many other physicians of eminence, that a long continued and excessive use of bitter remedies seldom fails to weaken the digestive power of the stomach, so as to produce a loss of appetite and impaired digestion, which has accelerated the death of those who had used them.

The Eau Médecinale d'Husson is a remedy much in vogue at present in gouty attacks, and in some cases it appears to have

Tinct. Cort. Cinchonæ C.

— Cardam. C. aa f. ʒss. M.

ft. Mistura, cujus sumat æger cochl. ij.
magna bis terve in die.

Vel,

5. R Ferri Subcarbonatis, ʒij.
Pulv. Cort. Cinchonæ, ʒj.

— Cinnam. Compos. ʒiss.

Syrup. Cort. Aurant. q. s. M.

ft. Electuarium, de quo capiat quantitatem
juglandis bis in die.

Compound Tincture of Peruvian
Bark,

— Cardamoms,
of each half an ounce.

Of this mixture let the patient take two
large spoonful twice or thrice a day.

Or,

5. Take Subcarbonate of Iron, two drachms.
Powder of Peruvian Bark, one
ounce.

Compound Powder of Cinnamon,
one drachm and a half.

Syrup of Orange Peel, a sufficiency
to form these ingredients into an electuary,
of which the bulk of a walnut is to be taken
twice a day.

considerably alleviated the paroxysm ; but in a few others it has produced alarming effects, such as syncope, cold sweats, extreme prostration of strength, excessive evacuations from the stomach and bowels, accompanied with a pulse scarcely perceptible, and a degree of insensibility that indicated approaching dissolution. Such consequences have, however, only ensued when an improper dose of the nostrum has been taken. Besides possessing the properties of an emetic and a cathartic, it appears also to be endowed with the virtues of a narcotic, as in some instances it seems to act as an anodyne previous to any sensible evacuation taking place. The remedy consists of some vegetable of a bitter nauseous taste (supposed by some to be white hellebore ; by others gratiola, or hedge-hyssop, and again by others to be colchicum*, or the common meadow saffron) infused in Spanish white wine, with an addition of tinctura opii.

The vinum colchici prepared from the roots of the meadow saffron, and given in the quantity of a fluid drachm twice a day, in any vehicle, has certainly been found a valuable remedy in both gout and rheumatism ; but to render the success of the medicine more certain, the state of the bowels should be particularly attended to, the patient abstaining from all food likely to prove flatulent.

The roots of the colchicum have been generally employed to make the vinum colchici, as in the Eau Médecinale, but it has sometimes appeared inert ; at others, productive of sudden, long continued, and excessive action of the stomach and bowels, and occasionally it has proved fatal. In a communication from Dr. Williams, through the medium of the London Medical Repository, (see No. 85,) we are informed that the seeds of the colchicum, when employed instead of the root, seldom fail of the desired effect, and invariably operate without the occurrence of any of those distressing and alarming symptoms so prevalent from the exhibition of the root. It is also mentioned that the colchicum seeds, so far from being limited in their use to gout and rheumatism, may be safely and beneficially extended nearly to the whole range of painful diseases of the asthenic kind.—Where acidity or flatulency prevails, the spiritus seminum colchici ammoniatus (prepared by macerating for ten days two ounces of the seeds in a fluid pint of the spiritus ammoniæ aromaticus) will be found, by the report of Dr. Williams, a medicine of greater value than the vinum seminum colchici.

In the stomachs of gouty people, a morbid acidity, accompanied by heartburn and flatulence, is usually to be met with, and even this has been thought to have the power of bringing on the

* Two ounces of the root of colchicum autumnale cut into slices, and macerated in four ounces of proof spirit, until the latter is fully imbued with the properties of the former, is said, by Mr. Want, to be the exact composition of the Eau Médecinale.

disease. Antacids have therefore been found a useful and salutary class of medicines for gouty persons. Alkalies have been considered as of too acrid a nature, and therefore absorbents are preferred; that most commonly used is magnesia, which proves both absorbent and laxative. To quicken its operation, if found necessary, we may combine* it with a small proportion of rhubarb.

Alkalies in various forms, such as the fixed alkali both mild and caustic, lime water, and soap, have however been employed in gouty habits, and of late the alkaline aerated water has been much used. Since it became common to exhibit those medicines in nephritic calculous cases, it has often happened that they were given to those who were at the same time subject to the gout; and it has been observed, that under a use of these medicines, gouty persons have received relief, and been longer free from attacks of the disease than before.

As a gentle aperient, rhubarb may be employed when costiveness is to be removed. If it disagrees, aloes may be given in the quantity of five or six grains combined with any aromatic†, the intent being not to purge, but to keep the bowels regular.

In those cases where gout produces anomalous affections of the head, stomach, and bowels, the greatest benefit may be derived from the Bath water; and it is here a principal advantage to be able to bring by warmth that active local inflammation in any limb which relieves all the other troublesome and dangerous symptoms. Hence it is, that this water is commonly said to produce the gout; by which is meant only, that where persons have a gouty affection, shifting from place to place, and thereby much disordering the system, the internal and external use of the Bath water will soon

- * 6. R Magnesiæ, ʒj.
Pulv. Rheī, gr. viij.
—— Cinnam. C. gr. v. M.

ft. Pulvis, pro re nata sumendus.

- Vel,*
7. R Magnesiæ, ʒss.
Pulv. Rheī, gr. x.
Aq. Menth. Pip. f. ʒjss. M.

ft. Haustus.

- Vel,*
8. R Aq. Menth. Pip. ʒvij.
Tinct. Gentian. ʒss.
Liquor. Potassæ, ℥ xx. M.
Magnesiæ, ʒj.
ft. Mistura. Sumantur cochlearia duo media
bis terve in die.
† 9. R Pulv. Aloes Spicat. gr. vi.

—— Zingib. gr. iij. M.
Syrup. Rhamni, q. s.
ft. Massa, in pilulas duas dividenda.

- * 6. Take Magnesia, one drachm.
Powdered Rhubarb, eight grains.
Compound Powder of Cinnamon,
five grains.

Mix them. This powder is to be taken occasionally, as the case may require.

- Or,*
7. Take Magnesia, half a drachm.
Powdered Rhubarb, ten grains.
Peppermint Water, one ounce and
a half.

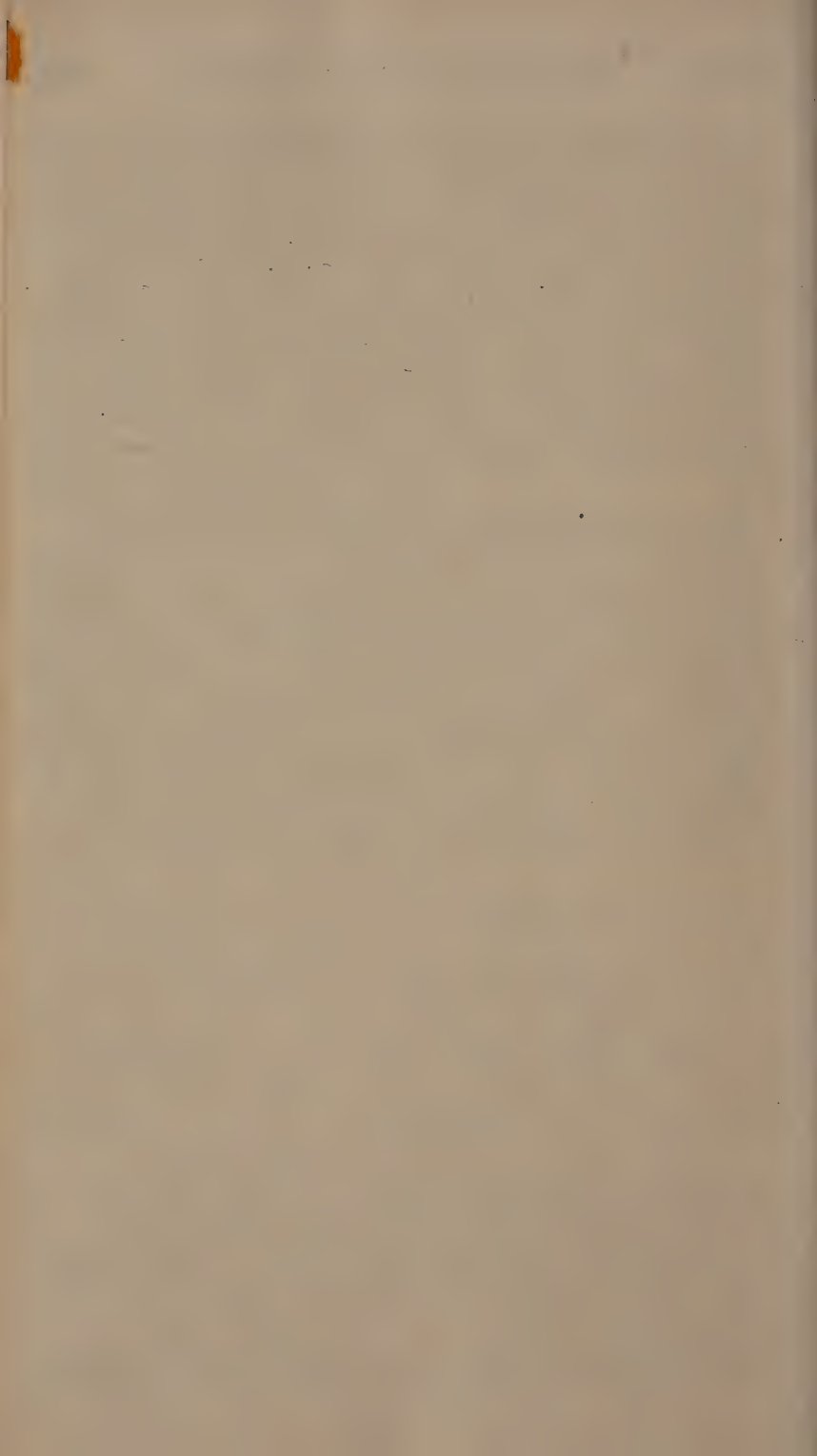
This draught may be taken whenever there is occasion.

- Or,*
8. Take Peppermint Water, seven ounces.
Tincture of Gentian, half an ounce.
Solution of Potass, thirty drops.
Magnesia, one drachm.

Of this mixture two dessert spoonful may be taken twice or thrice a day.

- † 9. Take Powder of Socotrine Aloes, six grains.

—— Ginger, three grains.
Syrup of Buckthorn, a sufficiency
to form the mass, which divide into two pills.



bring on a general increase of action, indicated by a flushing in the face, fulness in the circulating vessels, and relief of the dyspeptic symptoms; and the disorder will at length terminate in a fit of the gout, which is the crisis to be wished for.

The effect of the Bath waters as a medicine in erratic or wandering gout, is as strongly marked as the action of any medicine can possibly be by its effects; and in the most distressing cases, which have baffled the intentions of medicine and various means at a distance, the internal exhibition of the waters has appeared to concentrate the whole gouty virus, and fix it in one point*.

In various cases of gout, especially where the high inflammation of particular limbs has gone off, and where it has left either a number of dyspeptic symptoms, or a rigidity or impaired action in the seat of the disease, an internal use of Buxton water has been recommended. As an external application in gout, it has also been found serviceable in restoring the functions to parts so diseased.

In the sciatica or gout affecting the hip, we may recommend frequent blistering along the course of the sciatic nerve, together with electricity.

In severe attacks of atonic gout, some practitioners have advised the application of blisters to the lower extremities; but they ought to be avoided in those cases which are attended with much pain in the parts. Sinapisms, pediluvium, together with wine and other stimulants, have also been recommended in atonic gout for bringing the disease to the extremities.

The greatest attention should be paid to promote perspiration and avoid cold; and this is most effectually done by warm clothing, joined to moderate exercise. A flannel shirt, with a pair of stout shoes, and thick woollen or fleecy hosiery stockings, will be necessary articles of attire for those who cannot remove in the winter to a warmer climate.

When the stomach or intestines become affected in consequence of retrocedent gout, immediate relief ought to be attempted by making the patient drink freely of wine, or even brandy, joined with aromatics. In affections of this nature, strong spirits impregnated with assafoetida or garlic may also be given with much advantage. Opiates† joined with aromatics, or with camphor,

* See Dr. Falconer's Work on the Bath Waters.

—Practical Treatise on the same by Mr. J. H. Spry.

† 10. R Opii, gr. j.
Camphoræ, gr. v.
Ammonia Subcarbon. gr. vj.

Confect. Aromat. gr. v. M.
ft. Bolus, pro re nata adhibendus.

Vel,

11. R Misturæ Camphoræ, f. ʒjss.

Ammonia Subcarbon. gr. x.

† 10. Take Opium, one grain.
Camphor, five grains.
Subcarbonate of Ammonia, six grains.

Aromatic Confection, five grains.
Make them into a bolus, to be taken when requisite.

Or,

11. Take Camphor Mixture, one ounce and a half.

Subcarbonate of Ammonia, ten grains.

musk, or ammonia, may be of service. From one to four tea spoonsful of equal parts of camphorated tincture of opium, and ammoniated tincture of guaiacum, in any suitable vehicle, will be a proper medicine. Æther will likewise be a useful remedy. At the same time that we administer these medicines internally, warmth should be applied externally to the region of the stomach by hot cloths, fomentations, or a bladder filled with warm water, and hot bricks wrapped in flannel must be put to the feet. Frictions with brandy, or the linimentum ammoniæ fortius over the stomach, will also be proper. If nausea and vomiting come on, the stomach is to be relieved by taking a few draughts of wine, somewhat diluted with warm water, having recourse afterwards to opiates combined with camphor.

In retrocedent gout, where the heart becomes affected, the above means may be adopted.

If there is a translation of the disease from the extremities to the head, so as to threaten apoplexy or palsy, a large blister ought to be applied to the back, as likewise small ones to the inside of the legs, with cataplasms to the soles of the feet; and the patient must take from twenty-five to forty drops of the spiritus ammoniæ aromaticus every three or four hours, or a combination of volatile alkali, æther, and aromatics, as specified in the formulæ before given, omitting the opium. About six drachms or an ounce of the tinctura aloes may also be taken as a gentle purgative.

When the gout attacks the lungs, and produces asthma, blisters should be applied to the breast or back, and stimulating cataplasms to the soles of the feet, and opiates and antispasmodics should be administered internally. From twenty to fifty drops of æther may be taken every two or three hours in a glass of wine, and an opiate* may be repeated as the necessity of the occasion requires.

In this particular retrocession of gout, where the attack is so severe as to threaten suffocation, as well as where there is a translation to the head, venesection might be resorted to with advantage.

Tinct. Opii, ℥ viij.

Spt. Æther. Sulph. ℥ xx. M.

ft. Haustus, tertia quaque hora sumendus.

Vel,

12. R Moschi, gr. v. solve in
Misturæ Camphor. 3x. Dein adde

Spirit. Ammon. Aromat. 3ss.

Tinct. Opii, ℥ viij. M.

ft. Haustus.

* 13. R Confect. Aromat. 3ss.

Aq. Cinnam. f. 3jss.

Tinct. Opii, ℥ xx. M.

ft. Haustus.

Tincture of Opium, twelve drops.

Spirit of Sulphuric Æther, thirty drops. Mix them.

Take this draught every three hours.

Or,

12. Take Musk, five grains: dissolve it in Camphorated Mixture, ten drachms. Then add Aromatic Spirit of Ammonia, half a drachm.

Tincture of Opium, twelve drops.

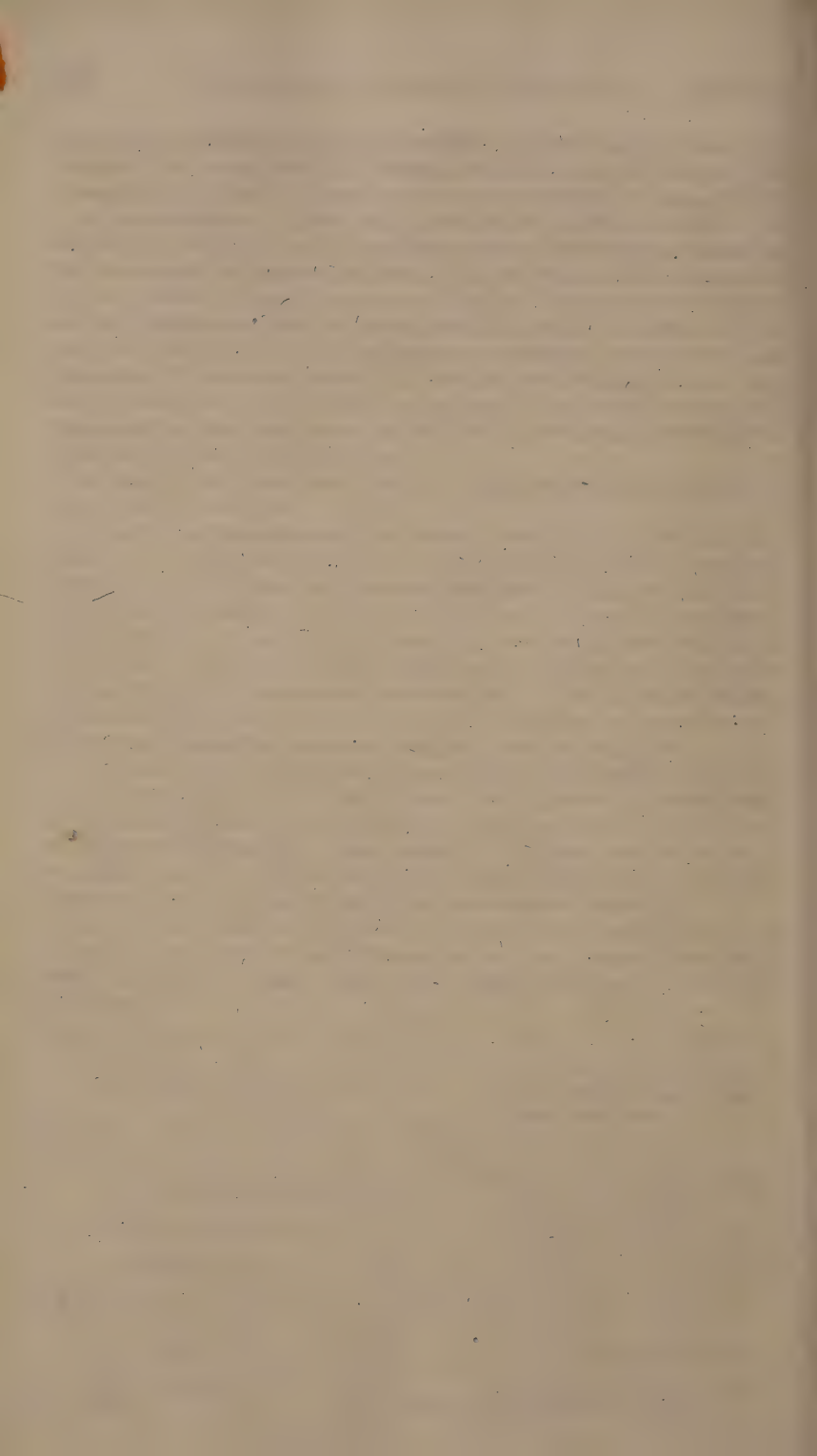
Mix them for a draught.

* 13. Take Aromatic Confection, half a drachm.

Cinnamon Water, one ounce and a half.

Tincture of Opium, thirty drops.

Mix them for a composing draught.



In severe cases of a sudden translation or metastasis of gout from the extremities to any vital part, such as the head, heart, lungs, or stomach, it may be justifiable to excite a counter-irritation by the external application of nitric acid, as has lately been practised in the cholera morbus of Hindostan, (see Cholera,) in preference to a blister of cantharides, which acts slowly, and requires a lapse of some hours to produce vesication.

Where the disease attacks the kidneys, and imitates a fit of the gravel, the patient ought to keep warm fomentations, or bladders filled with warm water, constantly applied over the parts affected; he should drink freely of tepid diluting liquors; and an emollient clyster, with an addition of a small quantity of tinctura opii, ought frequently to be injected. In order to alleviate the pain, thirty or forty drops of the same tincture may likewise be taken by the mouth in any kind of vehicle.

During paroxysms of the gout, the treatment must be active and appropriate; after they have subsided, the remaining duty to be performed, is the restoration of the healthy state of the digestive functions, and of due strength in the weakened limbs. In such cases and circumstances as do not forbid the use of steel, from too much vascular fulness and action, the ammoniated tincture of iron may be taken advantageously in a little warm water, in doses of twenty drops, gradually increased to about sixty.

The gout imitates many diseases, as has already been observed; and by being mistaken for them and treated improperly, is often diverted from its regular course, to the great danger of the person's life; for which reason, those who have had the gout ought to pay particular attention to any complaint that may happen to take place about the time they may have reason to expect another attack of it. Those likewise who never had the gout, but who from constitution or manner of living, have reason to expect it, ought also to be very circumspect with regard to its first approach, as by any wrong conduct, or improper treatment, it might be diverted from its right course, and be thrown upon some vital part.

To render the recurrences of gouty paroxysms less frequent, and their attacks less severe, we may rest assured that more is to be done by temperance in diet, cheerfulness and serenity of mind, a moderate exertion only of the intellectual faculties, an early hour of retiring to rest, obviating costiveness as the occasion may require, and by regular moderate exercise, than by any other means whatever, being at the same time attended with greater safety. The exercise must be suited to the condition of the patient. Walking will certainly be the best; but if he be unable to use it, he must employ some other kind, as riding on horseback, or in a carriage. Although walking may probably be irksome at first, and the feet feel tender, yet by perseverance it will become more agreeable, and great advantage will be derived. Where no exercise can be taken, some benefit may possibly arise from frictions.

In those who have an hereditary predisposition to gout, it is

certain that it may often be prevented from taking place by paying an early and strict attention to regimen, temperance, and exercise; and even after it has shewn itself by a regular attack, its returns may possibly be prevented for the remainder of life: but it is only those who have sufficient resolution to observe a steady perseverance in such a course, that can have any reason to expect a cure.

Exercise in persons disposed to the gout, not only strengthens the system, but tends likewise to prevent plethora. To prove advantageous, it must, however, be constant, regular, and continued through life, and should only be moderate. In the beginning of the disease, when the disposition or tendency to it is not strong, exercise will often prevent an attack which might otherwise have taken place, and in the intervals it will always be proper as long as the patient retains the use of his limbs. In a more advanced stage of the disease, where there is an evident disposition to a paroxysm, much walking ought to be avoided, as it might tend to hasten its approach, by increasing the inflammatory disposition in the lower extremities.

While the vigour of the system still remains unimpaired, either by intemperance or frequent attacks of the gout, an abstinence from animal food may be entered upon with safety, in order to prevent a recurrence of the disease; but if this abstinence shall not have been adopted until the constitution has been hurt by intemperance, frequent fits, or the decline of life, it certainly will prove injurious, and might tend to bring on an irregular attack. A sudden change from a full to a spare and low diet, will in all cases whatever be highly improper; and whenever an alteration is made in the mode of living, it ought to be done in a gradual manner.

Where an abstinence from animal food is to be observed, a diet consisting of milk and the farinaceous seeds will be the most proper, and all kinds of spirituous and fermented liquors are to be avoided; but where custom or a declining state of the system has rendered them absolutely necessary along with a use of animal food, they are then to be used with moderation.

Besides regimen and exercise, it will be necessary for the patient to observe universal temperance; he is to shun night studies, and all excess in sensual gratifications; he should go to bed betimes, and rise early; and he should avoid all exposure to cold, but more particularly getting wet in the feet. In the gout, as well as in regard to all other diseases, the cardinal rules in preserving the health are founded on temperance and exercise, on the choice of all those means which are found by the individual to invigorate the system, and the shunning whatever injures and enfeebles it.

Some persons much disposed to gout, who have been reduced to poverty and obliged to work hard and use a low diet, have been cured by it; which clearly demonstrates the efficacy of exercise, temperance, and a spare regimen.

RHEUMATISMUS, OR RHEUMATISM.

THE characteristics of rheumatism, as assigned by Dr. Cullen, are pyrexia, pain about the parts following the track of the muscles, attacking the knees and larger articulations, in preference to those of the feet or hands, increased by external heat.

The disease is distinguished into the chronic and the acute; being known by the former appellation when there is no great degree either of inflammation or fever present, but merely pains; and by the latter, when both fever and inflammation exist in a high degree.

It may arise at all times of the year, when there are frequent vicissitudes of the weather from heat to cold; but the spring and autumn are the seasons in which it is most prevalent: and it attacks persons of all ages; but very young people are more exempt from it than adults. Those whose employments subject them to alternations of heat and cold, are particularly liable to rheumatism.

Although acute rheumatism somewhat resembles the gout, still in some respects it differs from it. It does not usually come on so suddenly as a fit of the gout, but for the most part gives the patient warning by a slow and gradual increase of pain. Neither is it fixed to one spot like the gout, but is distinguished by its frequent wanderings from place to place, accompanied by a sense of numbness. It seldom attacks the small joints, but is confined chiefly to the larger, as the hip, knees, and shoulders. Acute rheumatism is generally attended with a continued fever; whereas the gout has periodical remissions. Like most of the pyrexia, it is preceded by rigors, and a sense of cold. A febrile, quick, and hard pulse supervenes; the veins near the part affected swell; and a throbbing pain is felt in the arteries. By degrees the pain increases, and the patient suffers cruel torture, which is increased on the least motion. The sense of pain resembles that of a slow dilaceration of the parts, and commonly goes off by a swelling of the joint or joints. The rheumatism, moreover, is not preceded by dyspeptic symptoms, as is usually the case with the gout; neither do chalky concretions form about the small joints and fingers, as in the latter.

Obstructed perspiration,—occasioned either by wearing wet clothes, lying in damp linen, sleeping on the ground or in damp rooms, or by being exposed to cool air when the body has been much heated by exercise, or by coming from a crowded room or public place into the cool air,—is the cause which usually produces rheumatism. Those who are much afflicted with this complaint are very apt to be sensible of the approach of wet weather, by finding wandering pains about them at that period: in fact, some are living barometers.

The proximate cause, of the acute species of the disease at least,

is supposed to be an inflammation of the membranes and tendinous aponeuroses of the muscles.

Acute rheumatism usually comes on with lassitude and rigors, succeeded by heat, thirst, anxiety, restlessness, and a hard, full, and quick pulse; the blood, when drawn from a vein, exhibits an inflammatory surface upon cooling, and the tongue preserves a steady whiteness; after a short time excruciating pains are felt in different parts of the body, but more particularly in the joints of the shoulders, wrists, knees, and ancles, or perhaps in the hip; and these keep shifting from one joint to another, leaving a redness and swelling in every part they have occupied, as likewise a great tenderness to the touch. Towards evening there is usually an exacerbation or increase of fever, and during the night the pains become more severe, and shift from one joint to another.

Sometimes the pain is confined to a few joints; in other cases it affects many at the same time. In no disease do we meet with such remarkable instances of metastasis, and no muscular part is exempted from the pain. The internal muscles, as the diaphragm and heart, have been said to be sometimes affected with metastasis. In these translations of rheumatic inflammation, the stomach is also sometimes attacked. The pain is met with in every degree of violence, and is highly aggravated by pressure or motion. The face in general is not flushed, there is seldom much headach, and in most cases there seems to be little tendency to delirium. The stomach generally is not affected, but the bowels are usually costive.

Early in the course of the disease some degree of sweating usually occurs: but it seldom removes the pains, or proves either salutary or critical; and it is somewhat singular that the pained limbs remain dry, when a sweat is on the rest of the body. In the beginning the urine is without any sediment; but as the disease advances in its progress, and the fever admits of considerable remissions, a lateritious sediment is deposited; but neither does this prove critical.

Chronic rheumatism is attended with pains in the head, shoulders, knees, and other large joints, which at times are confined to one particular part, and at others shift from one joint to another without occasioning any inflammation or fever; and in this manner the complaint continues often for a considerable time, and at length goes off, leaving the parts which have been affected in a state of debility, and very liable to fresh impressions on the approach of moist damp weather.

Little danger is attendant on chronic rheumatism: but a person having once been attacked with it, is ever afterwards more or less liable to returns of it, and an incurable anchylosis is sometimes formed in consequence of very frequent relapses. Neither is the acute rheumatism often accompanied with much danger, as it usually goes off spontaneously, or is removed by the timely em-



ployment of proper remedies ; but in some instances the patient has been destroyed by general inflammation, and now and then by a metastasis to some vital part, such as the head, lungs, heart, and stomach. Many cases of cardiac inflammation are indeed either combined or alternated with acute rheumatism. It has been observed, that persons subject to rheumatism are attacked more frequently than others with symptoms of an organic disease in the heart ; and that in some instances the lungs have been much affected with severe dyspnœa, no doubt from the disease being translated to these parts, occasioning real inflammation of these organs*. When retrocession actually occurs, there is no safety until the disease is removed, and the prognosis ought therefore to be very guarded indeed. Acute rheumatism, although accompanied with a considerable degree of inflammation in particular parts, has seldom been known to terminate in suppuration ; but a serous or gelatinous effusion sometimes takes place.

A general, but not unnaturally profuse perspiration, the deposit of a lateritious or furfuraceous sediment in the urine, eruptions on the skin, or moderate hæmorrhage of blood from the nose or other parts, may be regarded as favourable symptoms ; whereas the inflammation becoming erysipelatous, and assuming a dark red or rose colour, and this followed by vesications, metastasis of the inflammation to the head, chest, or abdominal viscera, producing the symptoms of the idiopathic diseases of these organs, are to be looked upon as unfavourable.

Rheumatism seldom proving fatal, very few opportunities have offered for dissections of the disease. In the few which have occurred, the same appearances have been observed as those mentioned under the head Inflammatory Fever. In the joints, thickening of the membranes, adhesions, and gelatinous effusions, are the only phenomena to be met with.

The principal thing to be attended to in the treatment of acute rheumatism, is to obviate the general inflammation which prevails ; and this is to be effected by strictly pursuing an antiphlogistic regimen, and by blood-letting in all cases where the vascular action is strong, the constitution robust, and the heat considerable ; proportioning the quantity we take away to the violence of the symptoms, and the age, strength, and habit of the patient. If the pains continue very severe, and the pulse full, hard, and quick, after bleeding, and the blood appears very sizzly on becoming cool, we may with great propriety repeat the operation either on the same day or the next ; but this mode of proceeding should be adopted only at an early period of the disease. The reduction of vascular action is, however, more particularly to regulate the repetition, than the buffy appearance of the blood, which in many cases continues to increase, notwithstanding the abstraction of blood, and is not diminished by bleeding. This circumstance

* See Medico-Chirurgical Transactions, vol. i.

should be attended to. To repeat bleeding until the pulse be reduced to 100 or a little below, may be a good rule.

In weak irritable habits, where no great degree of general inflammation prevails, and little or no fever attends, and where the inflammation is chiefly local, or the pain not violent, topical bleeding, by means of several leeches applied to the part affected, may be substituted instead of using the lancet, and will often be found to afford essential relief. Moreover, they are not attended with the risk of causing translations of the disease. They may likewise be used with benefit where much inflammation prevails in the system, as well as in particular parts, provided that some general bleeding has been premised or adopted. When leeches cannot be procured, scarifying and cupping may be employed in their stead.

It has been usual in acute rheumatism to rely principally on large and repeated bleedings at an early period, joined with an antiphlogistic regimen; and no doubt this evacuant plan of treatment has in some cases been carried to excess, and produced an alarming degree of debility. Having reflected much on this circumstance, and well considered the wonderful power which the digitalis possesses of diminishing the action of the heart and arteries, I have employed it in some severe cases of acute rheumatism after one or two bleedings from the system, and with much apparent advantage; for I found that its use rendered any further repetition of venesection unnecessary. In the instances to which I allude, from ten to twenty drops of its tincture were given every four or six hours.

In case of costiveness prevailing, one or two evacuations should be procured daily by making use of some gentle cooling purgative, such as the neutral salts, or by giving laxative clysters, which may be the preferable way when the disease is general and violent, as the motion occasioned by frequently getting up to stool would prove irksome and painful to the patient.

Where the pain is chiefly confined to one part, and is unaccompanied by much inflammation, the application of a blister will be likely to prove serviceable, or we may rub it with some kind of rubefacient liniment*; but where the pains are wandering, and there are frequent translations from one joint to another, neither

* 1. R Spirit. Camphoræ, f. ℥ij.
Liquor. Ammon. f. ℥ss.

Essent. Ol. Rosmarin. ℥ x. M.
ft. Linimentum.

Vel,
2. R Ol. Olivæ, f. ℥ij.
— Terebinth. f. ℥j.
Acid. Sulph. ℥ x. M.

Vel,
3. R Ol. Olivæ, f. ℥ij.
Camphoræ, ℥ij. Solv. et adde

* 1. Take Camphorated Spirit, two ounces.
Solution of Ammonia, half an ounce.

Oil of Rosemary, fifteen drops.
Mix them for a Liniment.

Or,
2. Take Olive Oil, three ounces.
Oil of Turpentine, one ounce.
Sulphuric Acid, fifteen drops.
Mix them.

Or,
3. Dissolve Camphor, two drachms, in
Olive Oil, two ounces; and add

of these remedies will be of much use. In acute rheumatism, warm fomentations ought never to be employed, as they are found to aggravate the pains instead of alleviating them.

Where, on the sudden subsidence of the external pain and inflammation, the head, heart, lungs, or stomach are attacked, so as to endanger the life of the patient, blisters should always be applied near those parts where the disease had originally existed, their power of counter-irritation being useful on such an occasion. Their action being however very slow, it might be justifiable in such cases, as well as in gouty metastases, to substitute the external application of nitric acid, in the manner mentioned to have been practised of late in the cholera morbus which prevailed in Hindostan.—See this disease.

When any of the joints of the extremities swell very much, and are highly painful, we may, besides drawing blood from the part by means of leeches, make use of attenuating cataplasms, such as the *cataplasma farinæ compositum** of the *Pharmacopœia Chirurgica*; the ingredients of which, being wrought into a paste with hot water, are to be wrapped round the part affected, and to be renewed morning and evening.

The reduction of heat by keeping linen cloths wetted in cold water, or in a solution of muriated ammonia, with the nitrate of potass, constantly to the inflamed parts, may, I think, be adopted with safety and much advantage in acute rheumatism, although in gout the remedy ought certainly to be looked on as hazardous. During the summer of 1807 I visited Russia for a few months, and understood that the physicians there are in the habit of recommending the application of snow or pounded ice in cases of this nature, and often with a very good effect.

When rheumatic inflammation is local and stationary, the aid of cold applications, or of the evaporating treatment with camphor mixture, conjoined either with alcohol or æther, made tepid, as noticed under the head of Gout, will be likely to prove very beneficial; but when the inflammation quickly wanders from one part to another, almost eluding our pursuit, we must rely more confidently on constitutional means, and make our local treatment accordingly both more subservient and considerate.

After the necessary evacuations have been made, diaphoretics may then be used; and either those of the antimonial kind, as advised under the head of Simple Fever, may be prescribed in small

Tinct. Cantharid. f. ʒj.

Liquor. Ammon. f. ʒss. M.

* 4. R Farinæ Secalis, lbj.
Fermenti Veteris Acris, f. ʒiv.

Natri Muriati, ʒij. M.
ft. Cataplasma.

Tincture of Spanish Fly, one drachm.

Solution of Ammonia, half an ounce.

Mix them for a Liniment.

* 4. Take Rye Flour, one pound.

Stale Vinegar or Beer, fou ounces.

Muriated Natron, two ounces.

Mix them for a cataplasma.

and frequently repeated doses, or from ten to fifteen grains of the pulvis ipecacuanhæ compositus* may be given every three or four hours. This indeed appears to be the best sudorific we can exhibit in acute rheumatism. Volatiles are employed by some practitioners in the cure of rheumatism, for the purpose of exciting a diaphoresis. With the same view camphor has been likewise administered. They may be given separately, or be combined together, agreeable to the formulæ advised below†, should the remedies before recommended not prove sufficiently powerful. To increase the effect of all these medicines, the patient should at the same time be enveloped in flannel, every article of linen being removed; and as soon as he begins to sweat, and not before, lest vomiting be induced, he ought to drink freely of diluents, such as herb tea, barley-water, and wine whey.

As an auxiliary remedy, warmth applied to the extremities, especially to the affected parts, is of some consequence. It may be employed either in the form of fomentations, or in a dry one, by warm bottles, or bricks wrapped in flannel.

Sweating is an evacuation which is resorted to very generally both in the acute and chronic rheumatism, and in many instances

* 5. R Pulv. Ipecac. C. gr. x.

Confect. Rosæ, gr. xij.

Syrup. q. s. M.

ft. Bolus, 3tia vel 4ta hora sumendus, superbib. cochl. iij. Misturæ sequentis :—

6. R Succ. Limon. f. ℥jss.

Ammonia Subcarbonat. 3j.

Aq. Fontan. f. ℥ivss.

Potassæ Nitrat. 3ss.

Syrup. Simpl. f. ℥ss. M.

ft. Mistura.

† 7. R Ammonia Subcarbon. gr. x.

Pulv. Antimon. gr. ij.

Confect. Rosæ, q. s. M.

ft. Bolus, 4tis horis sumendus.

Vel,

8. R Seri Lactis Vinos. f. ℥x.

Liq. Ammon. Subcarb. ℥xx. M.

Bibat æger hora decubitus.

Vel,

9. R Mistur. Camphoræ, f. ℥j.

Liquor. Ammon. Acetat. f. ℥ij.

Vini Antimon. Tart. ℥xv. M.

ft. Haustus, 4ta vel 6ta quaque hora repetendus.

* 5. Take Compound Powder of Ipecacuanha, ten grains.

Confection of Roses, twelve grains.

Syrup, a sufficiency to form a Bolus,

which may be taken every three or four hours, washing it down with three large spoonfuls of the following Mixture :—

6. Take Lemon Juice, one ounce and a half.

Subcarbonate of Ammonia, one drachm.

Pure Water, four ounces and a half.

Nitrate of Potass, half a drachm.

Syrup, half an ounce.

Mix them.

† 7. Take Subcarbonate of Ammonia, ten grains.

Antimonial Powder, two grains.

Confection of Roses, a sufficiency to form a Bolus, which may be taken every four hours.

Or,

8. Take Wine Whey, ten ounces.

Solution of the Subcarbonate of Ammonia, thirty drops.

Mix them, and let the patient drink the whole on going to bed.

Or,

9. Take Camphor Mixture, one ounce.

Solution of the Acetate of Ammonia, three drachms.

Wine of Tartarized Antimony, twenty-two drops.

Mix them for a draught, to be repeated every four or six hours.

with every essential benefit; but it has its inconveniences, for sometimes it comes out freely without producing any good effect, and when long continued it relaxes the skin, and makes the patient very susceptible of cold afterwards: to guard against which, it will be necessary for him to be confined to his chamber, and to wear a flannel shirt for some time.

In the early stage of the disease it is desirable to procure perspiration by diaphoretics of the antimonial kind, or the compound powder of ipecacuanha joined to saline medicines; and in some cases material relief has been obtained thereby. If, however, obvious benefit does not ensue within forty-eight hours, we ought then to discontinue the use of diaphoretics, as being more likely to do injury than good. Every local means to increase perspiration ought also after this period to be avoided, whether by a use of flannels, hot applications to the painful parts, or the warm bath. Instead of them, linen cloths dipped in camphor mixture and cold water may be applied.

Opiates combined with camphor are given by many practitioners in acute rheumatism; but such a compound is not likely to prove efficacious; and the best way of administering opium in this disease when the pain is considerable, is by using the pulvis ipecacuanhæ compositus, as has just been mentioned, or by giving it combined with antimony*. Other narcotics, such as conium, hyoscyamus, aconitum, and digitalis, are sometimes employed with seeming advantage after the bowels have been freely evacuated.

A peculiar mode of treating every case of acute rheumatism, by a liberal and early use of the bark of cinchona, had been adopted as well as recommended, by a late celebrated reader of Lectures on the Practice of Physic†. He informs us, in his Third Dissertation on Fever, that for the last fifteen years he had entirely left off bleeding in this disease, and that he had not lost above two or three patients although he treated several hundreds who laboured under it in this way; and he adds, that when he practised bleeding largely in acute rheumatism, metastases were very apt to take

† Dr. George Fordyce.

* 10. R Pulv. Antimonial. gr. ij.—iij.

Opii, gr. ss.

Confectionis Rosæ, q. s. M.

ft. Pilula, 6ta quaq. hora sumenda cum haustu salino communi.

Vel,

11. R Liquor. Ammon. Acetat. f. ʒiij.

Aquæ Menth. Virid. f. ʒj.

Vini Antimon. Tart. ℥ xv.

Tinct. Opii, ℥ xx.—xxx.

Syrup. Simpl. f. ʒij. M.

ft. Haustus, hora somni adhibendus.

* 10. Take Antimonial Powder, from two to three grains.

Opium, half a grain.

Confection of Roses, a sufficiency to form these into a pill, which is to be taken every six hours, washing it down with the common saline draught.

Or,

11. Take Solution of the Acetate of Ammonia, three drachms.

Mint Water, one ounce.

Wine of Tartarized Antimony, twenty-two drops.

Tincture of Opium, thirty to forty-five drops.

Common Syrup, two drachms.

Mix them, and give the draught at bed-time.

place, and to destroy the patient; which accident had rarely happened since he discontinued its use.

With due deference to so high an opinion, I am however induced to think, that where the inflammation of the system is great, the pulse quick and full, and the person young and of a robust constitution, early venesection (the quantity of blood to be abstracted being duly proportioned to the circumstances of the case) is not only necessary in attacks of acute rheumatism, but that those who fall victims to it die frequently from its not having been adopted.

Another advocate for a very early use of the bark of cinchona in this disease is Dr. Haygarth; who tells us*, that for several years his usual method of treating acute rheumatism has been to give either the antimonial powder or tartarized antimony, generally the former, till the stomach and bowels are sufficiently cleansed: without waiting for any other evacuation, or abatement either of the inflammation or the fever; he then orders the cinchona bark at first in small doses, and if they succeed, gradually in larger; but if it disagrees in any respect, or does not produce manifest relief of the symptoms, the bark is suspended, and the antimony again repeated till it shall have produced sufficient evacuations: After cleansing the stomach and bowels a second time, he administers the bark again, at first sparingly, and then more freely. He never continues it longer nor in larger quantity than what perfectly agrees with the stomach, the fever, and the rheumatic inflammation. Dr. Haygarth cautiously adds, however, that if doubts occur on any of these points, it will be advisable to have recourse to bleeding by the lancet or leeches, or both, and to more evacuations by antimony. In such cases the cinchona is not to be again employed till the inflammatory symptoms are abated.

Our author assures us, that with the exception of a very few cases, this bark has uniformly produced the most salutary effects. The pains, swellings, sweats, and other symptoms of inflammatory fever, manifestly and speedily abated, and gradually ceased, till health was perfectly restored. The evidence adduced by him is much in favour of the cinchona as a remedy in acute rheumatism.

It appears that Dr. Haygarth began to administer cinchona in the acute rheumatism in 1772, at first cautiously, and, as it manifestly produced salutary effects, more freely, upon the recommendation and high authority of that very eminent physician Dr. John Fothergill†. In the last edition of his *Clinical History of Acute Rheumatism*, Dr. Haygarth has adduced the most respectable testimony‡ in favour of this practice. The late Sir George Baker (who learned this method of treating the disease from Sir Edward

* See Dr. Haygarth's *Clinical History of Acute Rheumatism*.

† *Ibid.* pp. 59—72.

‡ *Ibid.* pp. 141—155.

Wilmot), Dr. Heberden (who quotes the recommendation of his father), Dr. Saunders, Dr. Willan, Sir Lucas Pepys, Dr. Lettsom, Sir Walter Farquhar, and Dr. Aikin, have all of them administered cinchona at an early period of acute rheumatism with very salutary effects. A late author* also confirms the utility of this practice from his own observations. But this mode of treatment, Dr. Haygarth observes, being directly contrary to medical theories, even successful experience by the most learned and sagacious physicians, has not yet prevailed against established doctrines, and the practice is but partially adopted.

By most physicians the use of cinchona bark, during the inflammatory state of acute rheumatism, has been disapproved of; and it is only after the inflammatory diathesis has been subdued by antiphlogistic remedies, and where at the same time the exacerbations of the disease are periodical, with considerable remissions interposed, that its use has been thought proper.

Since the first edition of this work appeared before the public, I have been much in the habit of administering the cinchona, joined with nitre†, in acute rheumatism, and generally with a very happy effect. I would therefore recommend this combination of medicine at an early stage of the disease, in preference to giving the bark separately; but I do not advise the use of it even in this way, until the inflammatory symptoms have been somewhat counteracted by the antiphlogistic remedies which have been pointed out. Where there are intermissions of pain, a clean and moist tongue, a perspiring skin, and a lateritious sediment in the urine, the use of this remedy is clearly indicated, and should no longer be delayed. In some cases I have of late employed it with much benefit, combined with the oleum terebinthinæ‡.

Dr. Hamilton, of Lynn Regis, informs us||, that in those cases of acute rheumatism where blood-letting and sudorifics have been

* See Granger's Medical and Surgical Remarks, pp. 240—267.

|| See vol. ix. of the Edinburgh Medical Commentaries.

† 12. R Pulv. Cinchonæ, ℥ss.—℥j.

Potassæ Nitratis, gr. x. M.
ft. Pulvis, 4tis horis repetendus.

Vel,

13. R Decoct. Cinchon. f. ℥iss.

Potassæ Nitratis, gr. xij. M.
ft. Haustus.

‡ 14. R Decoct. Cinchonæ, f. ℥iss.

Pulv. ejusdem, ʒj.

Ol. Terebinth. m xv.—xxv. M.
ft. Haustus, sextis horis adhibendus.

† 12. Take Powder of Peruvian Bark, half a drachm to one drachm.

Nitrate of Potass, ten grains.

Mix them, and repeat this powder every four hours.

Or,

13. Take Decoction of Peruvian Bark, one ounce and a half.

Nitrate of Potass, twelve grains.

Mix them for a draught, to be taken as frequently as the former.

‡ 14. Take Decoction of Peruvian Bark, one ounce and a half.

Powder of the same, one scruple.

Oil of Turpentine, twenty-two to eight and thirty drops.

Mix them, and give the draught every six hours.

pushed as far as may be thought prudent, without being productive of the desired effect, and where a sufficient remission cannot be obtained so as to give the cinchona bark, very great benefit is often to be derived from the use of the submuriate of mercury, combined with opium; which combination he has frequently employed in the proportion of from five grains to one of the former, and from one to one-fourth of the latter, according to the age and strength of the patient; and administered every six, eight, or twelve hours, as the degree of inflammation, or the threatening aspect of the disorder, seemed to require. Along with this remedy he enjoins a plentiful dilution with barley-water, or any other weak tepid beverage.

Early and moderate venesection, succeeded by gentle purgatives, calomel, opium, and antimony, is perhaps the best plan that can be pursued in acute rheumatism.

In acute rheumatism the patient must be kept on a cool spare diet, as milk, whey, buttermilk, light vegetable matters, panado, ripe fruits, &c.; animal food and fermented liquors should be avoided.

A different mode of treatment from what has been advised in acute rheumatism must be adopted in the chronic species. Here bleeding from the system will neither be necessary nor proper.

Where the ligaments and membranes of the joints are the peculiar seat of the disease, or an enlargement of the extremities of the bones has taken place, the first attempt at relief, especially in young and vigorous subjects, should be directed to local bleeding, either by leeches, or, what is to be preferred, the operation of scarifying and cupping. When the pain and irritation are abated by repeated bleeding, no time should be lost in securing a drain from the part by the aid of issues, making them with caustic in preference to the knife. In hip cases of long standing, as well as in obstinate ones of sciatica, the same practice will be found highly beneficial.

In most cases it will be advisable to rub the parts which are the seat of the disease several times a day with some rubefacient liniment, as prescribed in acute rheumatism, after which they are to be enveloped in flannel. The regular use of a flesh-brush, with electricity or galvanism, may be requisite in cases of long standing, and where there is any rigidity in the parts.

Exercise either of the whole body or of particular limbs will be highly important. As an exercise for the arm, the dumb-bells answer very well. For the lower extremities none will answer better than walking; and although it may prove a little irksome at first in some cases, still by perseverance much benefit will soon be experienced. The want of exercise is apt to induce stiffness in the limb.

Frictions with acetic æther on the painful parts have been employed in France with much benefit, particularly in cases of

sciatica and lumbago. The remedy is reported* to possess the advantage of producing an agreeable heat on the skin, and a very useful perspiration, without augmenting the irritation or erethism in the parts.

Camphor dissolved in æther, and applied externally in painful affection of the joints, has likewise afforded singular relief in a great variety of instances.

The ointment and embrocation of tartarized antimony may afford relief, and have the property of producing a crop of pustules wherever they are rubbed, and when this effect is procured, they ought of course to be discontinued.

Immersing the whole body in a warm bath, or applying it topically, by pouring warm water upon the limb from a kettle several times a day, has, in many instances, proved very useful; together with proper exercise, either of the part itself, or of the whole body, if the patient is capable of taking it. A quarter of an hour, or twenty minutes, will be sufficient time to remain in the bath, the temperature of which may at pleasure be varied from 90 degrees to 114. This scale appears sufficiently extensive in all cases to ensure the beneficial effects to be expected from the use of a tepid or hot bath.

If the pains are of a recent date, and chiefly attack the muscles and thin membranous coverings, occasionally shifting from one part to another, and the strength is at the same time but little reduced, there can be no doubt that a moderate use of the warm bath may be serviceable; but where it proves unsuccessful after two or three trials, it ought to be discontinued. In soothing pain, relaxing the stiffened joints and rigid fibres, particularly in elderly patients whose strength has been much reduced by the length and violence of the disorder, a tepid bath of from 84 to 90 will often prove a useful auxiliary to the other means we employ.

Both remedies however may, I think, be considered of inferior value in the cure of rheumatism, when compared with the topical, and sometimes general use of hot water in the form of vapour. Whenever the joints are very rigid, and the pain upon motion exquisitely severe, or where the muscles have become contracted and almost paralytic; and indeed in all protracted cases of the disease of the hip joint, lumbago, or sciatica, the vapour of hot water, locally and properly applied, will seldom fail, in conjunction with other proper topical applications, to prove a safe and successful remedy. The mode of applying it must be regulated according to circumstances. A large boiler with a pipe affixed to it forms a simple apparatus. With this the parts affected may be steamed for about half an hour at a time, repeating the process two or three times a day.

A vapour bath, constructed agreeably to the plan advised by the Honourable Basil Cochrane*, or in the Russian manner, would

* See *Recueil Périodique de la Société de Médecine de Paris*, No. xlviii.

† See his pamphlet on Vapour Baths.

be a great acquisition in all infirmaries and hospitals. The latter is very simple. The building usually consists of a wooden house, situated, whenever it is possible, by the side of a running stream: In the bath-room is a large vaulted oven, which, when heated, makes the paving-stones lying upon the top of it red hot; and adjoining to the room is a kettle fixed in masonry for the purpose of holding boiling water. Round about the sides of the room are a few rows of benches one above another, like the seats of an amphitheatre. Little light is admitted, but here and there are apertures for permitting the vapour to escape, the cold water which is wanted being let in by small channels.

The heat of the bath-room is usually from 32 to 40 degrees of Reaumur's thermometer, that is, from about 114 to 132 of Fahrenheit's. Warm water is thrown every five minutes or so upon the hot stones, by which means the heat is somewhat increased, especially in the upper parts of the building. The bathers recline on the benches in a state of nature, and they perspire more or less in proportion to the heat of the humid atmosphere in which they are enveloped. To promote perspiration the better, and completely to open the pores, they are at first well rubbed with the hands, and then gently flagellated with leafy bunches of birch. After remaining awhile, they quit the sweating bench, and wash the body with warm or cold water. During my stay at Petersburg, I observed that many of the Russians threw themselves immediately from the bath-room into the adjoining river. In the winter they roll themselves in snow, in a frost of ten or more degrees of Reaumur's thermometer: nor is the sudden change succeeded by illness, or productive of the least inconvenience to them.

In cases of chronic rheumatism, where great debility prevails, with deep-seated pain, the warm bath frequently renders the patient hot and restless, and seldom or never relieves, unless it induces sweat. Now the advantage of the vapour bath is, that perspiration takes place at a much lower temperature in it than the other: the vapour bath need not to be heated above 96 degrees to produce a salutary perspiration, whereas a warm bath seldom produces this discharge at a lower temperature than 100 degrees, and from that it is used up to 112 in some of the hot springs at Bath. Besides this increased heat applied to the skin when the exhalants are ready to yield their contents, the surrounding medium presses upon the cuticle, and in some measure prevents the flow of perspiration which it had brought on the surface: on the contrary, in the vapour bath the heat being applied to the body in an aëriiform state, unites with the insensible perspiration as it arises by the exhalants, condenses upon the surface, and drops from the body by its own weight, meeting with no resistance from the elastic vapour*.

After exposing the diseased parts for a due length of time to

* See Treatise on Warm and Vapour Baths, by Dr. Kentish.

the action of vapour, and diligently rubbing in some rubefacient liniment during the operation, we may immediately after employ electricity, either in slight shocks, or by drawing sparks. Perhaps the latter may be the preferable way. The process being completed, the parts are then to be enveloped in flannel.

Dr. Bardsley, in his Medical Reports, mentions, that he has seen at the Manchester Infirmary several hip cases of long standing yield to the persevering use of topical bleeding by means of cupping and scarifying, with the aid of issues; but in order to remove the rigidity and want of tone which remained in the parts after the subsidence of the more violent symptoms, he was obliged to have recourse to the aid of vapour and electricity. In some very obstinate cases of sciatica, which resisted all other means of relief, he has also witnessed the happiest effects from issues; but, he observes, that he often found it necessary to surround the joints with several of these drains, moderating the degree of irritation and discharge according to the obstinacy of the disease and the strength of the patient.

The chronic rheumatism in all its forms succeeding to the acute, and where the inflammation has been chiefly seated in moving parts, is often wonderfully relieved by bathing in the Buxton waters; and the healthy action is soon so far restored as to enable the patient to use the more powerful remedy of sea-bathing, or the common cold bath. On account of the slightness of the shock of immersion, very delicate and irritable habits, and especially parts weakened by disease, can generally bear this degree of cold, and overcome it by a very small reaction; to produce which appears to be often a most salutary effort of the constitution. Hence the Buxton bath is become almost a technical term for any bath heated to the highest degree that is compatible with giving some sensation of cold when the body is first plunged into it.

The power of the bath water is chiefly confined to that species of rheumatism which is unattended by inflammation, or in which the patient's pains are not increased by the warmth of his bed. In all such cases, both bathing and pumping are very appropriate remedies, and where the joints have become stiffened, they will be likely to prove highly beneficial*.

Cold bathing has been advised by some physicians, while others again have disapproved of it. In some instances it has certainly proved very beneficial. The cold bath is a stimulant, and promotes perspiration, and by strengthening the body, prevents a relapse. While there are any febrile symptoms it should not be used.

The shower bath, with subsequent frictions and warm clothing,

* See Dr. Haygarth's Observations on Rheumatic Fever.
Practical Treatise on Bath Waters, by Mr. J. H. Spry.
Dr. Falconer's Treatise on the same Waters.

will be found not only a successful mean of cure in many cases of chronic rheumatism, but also a very effectual preventive.

Blisters are sometimes employed in this complaint: but they seem to be most serviceable in those cases where the disease partakes of the nature of acute rheumatism, or where the pain is fixed in any particular joint. With respect to the mode of their application, it seems proper to observe, that a repetition of fresh blisters will be far preferable to keeping up a constant sore by stimulating the vesicated parts with the unguentum cantharidis: and in the former way we shall likewise produce greater effect upon the disease. In some instances it will be found more beneficial to apply the remedy at a little distance from the seat of the disease, than to lay it immediately on the affected part. Indeed, whenever the complaint seizes upon any of the larger and deep-seated muscles at their origin near the joints, applying blisters to the inferior extremities of such muscles, and near to the points of their insertion, will be found highly beneficial. Thus in recent and slight cases of sciatica, the application of a blister to the inferior extremity of the thigh-bone often proves speedily useful.

Acupuncturation (punctures made with needles) has been tried, and with complete relief in some instances of severe rheumatic pain occupying a fleshy part, such as the deltoid muscle. Before the pain has completely disappeared, it has, however, on some occasions been necessary to introduce the needles every third or fourth day, for six or seven times.

Compressing the large arteries by means of a tourniquet, as mentioned under the head of Intermittents, is another remedy which has been employed with advantage* in some instances of severe rheumatic pains.

Several cases of chronic rheumatism of great severity and long standing, and which had resisted all previous means, but which were promptly and effectually removed by bandages of flannel round the diseased limb, carried from below upwards, are recorded by Dr. Balfour in the *Edinburgh Medical and Surgical Journal*†, as well as in a work published by him‡. In applying them, he found it necessary in some instances, especially at the beginning, to roll them tighter than they could well be borne for any length of time, and in such cases the frequent removal of the bandages, with the aid of manual application of friction, and more especially of percussion in the intervals, he says, are indispensable. The practice of applying pressure by bandages, in his opinion, may prove a useful adjuvant or auxiliary to the other means, particularly warm bathing, for the removal of this painful disease.

* See Dr. Duncan's *Annals of Medicine* for 1801.

† See No. xlii.

‡ See *New Method of treating Rheumatism*, by Wm. Balfour, M. D.

Where the knee or any other joint becomes enlarged from effusion, it ought to be diligently rubbed twice or thrice a day with about an ounce of the muriate of ammonia dissolved in twelve ounces of common vinegar.

The internal remedies which have been most generally recommended in chronic rheumatism are sudorifics and medicines of a stimulating nature, which abound in essential oils and resins; and therefore volatile alkaline salts, guaiacum, turpentine combined with cinchona and the like, may be administered as in the under-mentioned formulæ*. In the most aggravated instances of this species of rheumatism, where great torpor and debility prevail, guaiacum, in as large doses as the stomach will bear, often proves a powerful remedy, when aided by topical applications. The ammoniated tincture of this medicine, joined to a strong decoc-

* 15. R Ol. Terebinth. f. ʒjss.

Vitell. Ovi, q. s.

Dein adde

Spirit. Junip. Comp. f. ʒj.

Decoct. Cinchon. f. ʒv. M.

ft. Mistura, cujus sumat. cochl. larg. ij. quarta qua. hora.

Vel,

16. R Tinct. Guaiac. Ammoniat. f. ʒij.

Spirit. Cinnam. f. ʒss.

Decoct. Cinchon. f. ʒj.

Vini Antimon. Tart. ℥xvj. M.

ft. Haustus, bis terve die sumendus.

Vel,

17. R Tinct. Guaiac. Ammoniat. f. ʒij. pro dos, in quovis vehiculo.

Vel,

18. R Gum. Guaiac. ʒj.

Ammonia Subcarbonat. gr. x.

Confect. Rosæ, q. s. M.

ft. Bolus, mane et vespere adhibendus.

Vel,

19. R Gum. Guaiac. gr. xv.

Pulv. Antimonial. gr. ij.

Confect. Opii. gr. x.

Syrup. q. s. M.

ft. Bolus.

Vel,

20. R Gum. Guaiac. Pulv. ʒj.

Pulv. Ipecac. Comp. ʒss.

ft. Pulvis, omni nocte capiendus.

* 15. Take Oil of Turpentine, one drachm and a half.

Yolk of Egg, a sufficiency to mix them.

Then add

Compound Juniper Spirit, one ounce.

Decoction of Bark, five ounces.

Of this mixture, two tablespoonsful may be taken every fourth hour.

Or,

16. Take Ammoniated Tincture of Guaiac, two drachms.

Spirit of Cinnamon, half an ounce.

Decoction of Bark, one ounce.

Wine of Tartarized Antimony, twenty-four drops.

Mix them for a draught, to be taken twice or thrice a day.

Or,

17. Take Ammoniated Tincture of Guaiac, two drachms for a dose.

In any vehicle.

Or,

18. Take Gum Guaiac, one scruple.

Subcarbonate of Ammonia, ten grains.

Confection of Roses, a sufficiency to form a bolus, which may be given morning and evening.

Or,

19. Take Gum Guaiac, fifteen grains.

Antimonial Powder, two grains.

Opiate Confection, ten grains.

Syrup, a sufficiency to make them into a bolus.

Or,

20. Take Powdered Gum Guaiac, one scruple.

Compound Powder of Ipecacuanha, half a scruple.

Mix them for a dose, to be taken every night at bed-time.

tion of cinchona, often proves serviceable in very obstinate cases. Internal medicines, however, without the aid of the external means before noticed, will seldom or never effect a cure in severe and obstinate cases.

Hydrargyri submuriæ and other preparations of mercury have been given in this disease along with the decoctum sarsaparillæ compositum; but they seem best adapted for those cases where we suspect it to be connected with a syphilitic taint. In palliating symptoms, and allaying pain and irritation, small doses of the antimonial powder and opium combined with the submuriate of mercury, sometimes prove useful.

Some medicines of the narcotic class, as conium and aconitum, have also been administered in chronic rheumatism.

In chronic rheumatism it will be absolutely necessary to persevere for a considerable length of time in the use of whatever medicines we employ, otherwise but very little benefit can be derived from them.

If in the course of the disease the patient's rest should be much disturbed throughout the night by the severity of the pains, an anodyne draught may be ordered for him, to be taken at bed-time.*

Colchicum combined with opium is a good combination of medicine, and well calculated to afford relief, particularly in the chronic form of the disease.—See Gout.

Where the different combinations of guaiacum, opium, antimony, and mercury, have proved ineffectual, very speedy and good effects have been derived from a cautious exhibition of the arsenical solution, as noticed under the head of Intermittents. It may be given with an equal proportion of tinctura opii in doses of ten drops, repeated twice or thrice a day in any convenient vehicle, and probably a decoction of the cinchona bark may be as good as any we can employ. It seems, however, to be pretty generally admitted, that it is chiefly in the protracted chronic rheumatism, where the vital powers are much diminished, and the ends of the bones, periosteum, capsules, or ligaments of the joints, are likewise partially affected, that the use of arsenic is likely to prove essentially serviceable or successful†. In such cases we can begin with the quantity before mentioned, and so increase the dose gradually according to the effect produced on

† See Dr. Bardsley's Medical Reports.

* 21. R Liquor. Ammon. Acet. f. ʒij.

Aq. Cinnam. f. ʒj.

Tinct. Opii, ℥ xxvi.

Vini Antimon. Tart. ℥ xvj.

Syrup. Papaveris, ʒij. M.

fiat Haustus.

* 21. Take Solution of the Acetate of Ammonia, three drachms.

Cinnamon Water, one ounce.

Tincture of Opium, forty drops.

Wine of Tartarized Antimony, twenty-four drops.

Syrup of Poppies, two drachms.

Mix them for a draught.

the stomach and bowels. In some instances, a degree of erythema arises on different parts of the body in consequence of administering this remedy; and in others, a soreness of the mouth and pyalism are excited. Costiveness generally ensues; and this we must obviate by some proper laxative taken from time to time. It may be sometimes necessary to intermit its use for a day or two, and then return to it again.

Arsenic will do little good in recent cases of rheumatism, and especially in young subjects: indeed it can rarely be persevered in where the patient is not much reduced in strength, owing to the greatness of its stimulating power; for which reason it succeeds best in old persons.

As a mean of relief in chronic rheumatism, particularly in protracted cases, the cinchona bark may be employed.

No change whatever will be necessary in the patient's ordinary mode of living in chronic rheumatism, unless it happens to be intermixed with the acute, and then the diet should be cooling, light, and nutritive. In chronic rheumatism, mustard and horseradish may be taken freely in their natural state. Weak wine-whey, or barley-water, with a small quantity of the supertartrate of potass dissolved in it, may be used for common drink. Those who are subject to either kind of rheumatism should wear flannel next to the skin.

Where there are any suspicions of the disease being connected with a syphilitic taint, a long-continued course of mercurial alteratives (see Syphilis) must be entered upon.

Chronic rheumatism sometimes affects the lumbar region, with an acute pain shooting down into the os sacrum, so that the patient cannot stand upright without suffering great pain; neither can he enjoy ease when in bed. This affection is known by the name of lumbago. The disease sometimes fixes likewise in the hip-joint, and is then called sciatica. Both of these affections are to be treated nearly in the same manner as chronic rheumatism. In sciatica and local pains of the hip and loins turpentine is often given with relief, as is likewise guaiacum combined with the essential oil of sassafras.

From a paper inserted in the sixth volume of the Memoirs of the Medical Society of London, by Dr. Wm. Falconer, it appears that the external application of the Bath waters has proved a most valuable and efficacious remedy in innumerable instances of ischias, or the diseases of the hip-joint. The following is the mode of proceeding which has been pursued:—

When the patient is tolerably strong, and the symptoms moderate, he is directed to bathe in a hot bath of about 105 degrees of heat. The usual time of continuing in the bath is from fifteen to twenty-five minutes, and it is generally repeated twice or thrice a week. After a few times bathing, the dry pump, as it is quaintly called, or pumping on the affected part without bathing, is advised; and this is tried on the affected part on those days when the

patient does not bathe. From fifty to two hundred strokes of the pump are usually given.

The first good effects of the application are to abate the stiffness and pain of the joint, and to afford a greater latitude and extent of motion, which are often perceived after using it three or four times. As the effects of the remedy proceed, the soreness and swelling diminish; the nocturnal pain, which is often very distressing, abates; the power of supporting the body on the lower limb on the affected side increases; the legs, whether shorter or longer, approach towards their proper dimensions; and the muscles, that were let down and wasted, regain their natural shape, firmness, and plumpness. Where a use of the waters seems to succeed thus favourably, there is no other remedy employed.

It sometimes happens, however, that the waters will shew their beneficial effects to a considerable extent for a time, and then the amendment seems to be at a stand, but still without any accession of new morbid symptoms, or without any aggravation of the old. In such cases it is found requisite to suspend the use of the waters for a short period, and to apply a blister upon the seat of the pain; after the healing of which, the application of the waters may be repeated with advantage.

Where it happens that the irritability of the nerves is much excited by a use of the bath, or that it causes profuse perspiration, much caution is required. In instances of the latter kind, unaccompanied by fever, a light infusion of cinchona with aromatics is generally serviceable: but the tendency to fever is most to be apprehended. If the spot where the uneasiness is felt be extremely sore, and tender to the touch, and the swelling and pain are considerable, then it will be necessary to be on our guard. Cupping-glasses, with scarifications, are applied in such cases with advantage; or, if the skin be too sore or tender to endure without much pain the suction of a cupping-glass, a large number of leeches have been substituted in the place of the other, and by being repeatedly applied, have proved of great service. In aid of these applications, saline cooling purgatives, and the common febrifuge draught, with antimonials, are administered with advantage. For the relief of the pain, which often subsists without fever, it is found necessary to employ opiates; and a preference is given by Dr. Falconer to the pulvis ipecac. compos. in the quantity of from five grains to twenty, once or twice in the course of the day and night.

If these means prove effectual in procuring an abatement of the symptoms, the bath is cautiously tried, and especially the cross-bath, which is cooler than the other, and this for a short time only. If it can be borne without aggravating the symptoms, but rather with a soothing effect, it is directed to be repeated after an interval of three or four days, interposing the purgative before mentioned occasionally. When the bath can be borne with ease, the use of the pump in the bath is recommended, as the impetus

of the water thrown on the part affected is less than in the dry pump, by the stream being conducted to the part beneath the surface of the water of the bath.

By these means, together with the assistance of a blister on the part, the application of the waters is rendered safe, and often effectual, in cases, we are told, that seemed at first view not to allow their use. To reduce the swelling, and promote a re-absorption of the effused fluid, when that can be safely done, Dr. Falconer directs a trial to be made of the lime poultice, composed of one part of quicklime, fallen to powder in the air, and two parts of oatmeal, which being made into a poultice with hog's-lard, and spread thick on a cloth, is to be applied temperately warm to the part. This poultice is to be repeated every night, but to be removed in the morning. It generally produces some degree of moisture or exudation under it, though without raising a blister: and this gradual local discharge is often an effectual though gradual method of reducing tumours both of the hip and of the knee.

Those who are subject to rheumatic complaints ought carefully to avoid all exposures to cold and wet, and they should go warmly clothed, and wear flannel next the skin.

ORDER III.

OF EXANTHEMATA, OR ERUPTIVE FEVERS.

MOST of the diseases of this order are contagious, and attack a person only once in his life: they begin with fever, and at a definite time numerous and small eruptions are perceived scattered over the skin. In the nosology of Dr. Cullen, erysipelas is placed among this order, and although considered by some as contagious, still as it often affects the same person repeatedly, and in some becomes constitutional, it cannot be so arranged with propriety. In this volume it is placed with erythema among the preceding order of phlegmasiæ.

VARIOLA, OR SMALL-POX.

SMALL-POX is a disease of a very contagious nature, marked by a fever which is usually inflammatory, but now and then is of a typhoid nature, attended with vomiting, and upon pressure of the epigastrium, with pain; succeeded after a few days by an eruption of red pimples on different parts of the body, which in the course of time suppurate, and at length fall off, leaving frequently behind them little pits in the skin, and, in severe cases, scars.

With regard to the history* of the small-pox, it appears from the researches of eminent writers, that this disease, as also the measles, had prevailed in China and Hindostan from remote antiquity, yet had not extended to the more western nations until the middle of the sixth century. About this period these maladies reached the southern coasts of Arabia, by vessels trading with India, and broke out near Mecca, during the war of the elephant, (as it has been termed,) in the year 569, immediately before the birth of Mahomet.

During the latter parts of the sixth, and whole of the seventh century, they were spread by the Arabians over the remaining countries of Asia, and all that part of Africa which is washed by the Mediterranean Sea. In the eighth century Europe was contaminated in consequence of the Saracens invading Spain, Sicily, Italy, and France, and the above diseases gradually extended to the north. They had reached Saxony, Switzerland, and England, in the ninth or tenth century. And lastly, in the beginning of the sixteenth century, twelve years after the death of Columbus, the infections were transported by the Spaniards to Hispaniola, and soon afterwards to Mexico, and diffused speedily over that hemisphere also.

The small-pox attacks people of all ages, but the young of both sexes are more liable to it than those who are much advanced in life; and it may prevail at all the seasons of the year, but in general is most prevalent in the spring and summer.

It rarely happens that any person is attacked a second time with the disease, however he may be afterwards exposed to its infection, or even be repeatedly inoculated with variolous matter. A few instances to the contrary have now and then occurred, however, and with a high degree of severity. Affirmations of this from the highest authorities are on record. Dr. Jenner was of opinion, I believe, that the susceptibility to receive variolous contagion always remains through life, but under various modifications or gradations, from that point where it passes silently through the constitution, up to that where it appears in a confluent state, and with such violence as to destroy life.

The small-pox is distinguished into the distinct and confluent; implying, that in the former the eruptions are perfectly separate from each other, and that in the latter they run much into one another. The distinct may often be distinguished from the confluent before the eruption appears, by the mildness of its attack, by the synochal type of the fever, the late appearance of the eruption, and the absence of typhoid symptoms.

Some anomalous varieties of small-pox occasionally occur in practice: viz. the crystalline, in which the fluid never becomes opaque or purulent; the vesicular, in which small vesicles appear in the interstices of the pustules; and some others;

* See Mr. Moore's History of the Small-Pox, p. 110.

but which are all merely different modifications of the same disease.

Both the distinct and confluent small-pox are produced either by breathing air impregnated with the effluvia arising from the bodies of those who labour under the disease, or by the introduction of a small quantity of variolous matter into the habit by inoculation; and it is probable that the variety of the small-pox is not owing to any difference in the contagion, but depends on the state of the person to whom it is applied, or on certain circumstances concurring with the application of it.

Many physicians of eminence are of opinion, that the variolous contagion is limited to a narrow sphere, and that it seldom, if ever, is conveyed by the wind to a distance, as some have imagined it capable of being. Dr. Haygarth, in his Sketch of a Plan to exterminate the casual Small-pox from Great Britain, informs us, that certain facts appear to exhibit *negative* proofs that the open air is not contaminated to a great distance from the patient; not to one thousand five hundred feet, nor probably to one hundredth part of the space. He mentions, that very few cases have been adduced by those who have corresponded with him on the subject, in which clothes exposed to variolous miasma have been even suspected of conveying infection, and that several have given a negative testimony against this mode of communication. He further notices, that innumerable instances are to be produced where medical men, after exposing themselves to the miasms of an infectious chamber, in a very short time nearly approach persons liable to the distemper, who are yet not infected by the interview; and that inoculators are daily in this situation without communicating the casual small-pox. The period during which infection remains latent in the body, he observes, is determined by the testimony of many to be, in the inoculated small-pox, from the fifth day to the sixteenth, seventeenth, and even the twenty-third: in the casual or natural small-pox, a little but not much longer than the common period in inoculation.

A variety of opinions have been entertained respecting the effect of the variolous infection on the fœtus in utero; a sufficient number of instances, however, have been recorded, to ascertain that the disease may be communicated from the mother to the child. In some cases the body of the child at its birth has been covered with pustules, and the nature of the disease has been most satisfactorily ascertained by inoculating with matter taken from these pustules. In other cases there has been no appearance of the disease at the time of the birth, but an eruption and other symptoms of the malady have appeared so early, as to ascertain that the infection must have been received previously to the removal of the child from the uterus. Moreover, some cases reported in the first volume of the Medico-Chirurgical Transactions of London*, by Dr. Jenner, point

* See page 271.

out the obvious infection of the fœtus before birth, and communicated through the mother, she being already secure from any visible occurrence of the disorder,—which is indeed a very extraordinary circumstance.

Four different states or stages are to be observed in the small-pox :—first, the febrile ; second, the eruptive ; third, the maturative ; and fourth, that of declination or scabbing, which is usually known by the name of secondary fever.

When the disease has arisen naturally, and is of the distinct kind, the eruption is commonly preceded by a redness in the eyes, soreness in the throat, pains in the head, back, and loins, weariness and faintness, alternate fits of chilliness and heat, thirst, nausea, inclination to vomit, and a quick pulse.

In some instances these symptoms prevail in a high degree, and in others they are very moderate and trifling. In young children, startings and convulsions are apt to take place a short time previous to the appearance of the eruption, always giving great alarm to those not conversant with the frequency of the occurrence.

About the third or fourth day from the first seizure, the eruption shews itself in little red spots (similar to flea-bites) on the face, neck, and breast; and these continue to increase in number and size for three or four days longer ; at the end of which time they are to be observed dispersed over several parts of the body.

If the pustules are not very numerous, the febrile symptoms will generally go off on the appearance of the eruption, or they will become very moderate. It sometimes happens, that a number of little spots of an erysipelatous nature are interspersed among the pustules ; but these generally go in again as soon as the suppuration commences, which is usually about the fifth or sixth day ; at which period a small vesicle, containing an almost colourless fluid, may be observed upon the top of each pimple.

Should the pustules be perfectly distinct and separate from each other, the suppuration will probably be completed about the eighth or ninth day, and they will then be filled with a thick yellow matter ; but should they run much into each other, it will not be completed till some days later.

When the pustules are very thick and numerous on the face, it is apt about this time to become much swelled, and the eyelids to be closed up ; previous to which, there usually arises a hoarseness and difficulty of swallowing, accompanied with a considerable discharge from the mouth of viscid saliva.

About the eleventh day the swelling of the face usually subsides, together with the affection of the fauces, and is succeeded by the same in the hands and feet ; after which the pustules break and discharge their contents, and then becoming dry, they fall off in crusts, leaving the skin which they covered of a brown red colour, which appearance continues for many days. In those cases where the pustules are large, and are late in becoming dry and falling off, they are very apt to leave pits behind them ; but where they

are small, suppurate quickly, and are few in number, they neither leave any marks behind them, nor do they occasion much affection of the system.

In the confluent small-pox the fever which precedes the eruption is much more violent than in the distinct, being attended usually with great anxiety, heat, thirst, nausea, vomiting, and a frequent and contracted pulse, and often with coma or delirium. In infants, convulsive fits are apt to occur, which either prove fatal before any eruption appears, or they usher in a malignant species of the disease.

The eruption usually makes its appearance about the third day, being frequently preceded or attended with a rosy efflorescence, similar to what takes place in the measles: but the fever, although it suffers some slight remission on the coming out of the eruption, does not go off as in the distinct kind; on the contrary, it becomes increased after the fifth or sixth day, and continues considerable throughout the remainder of the disease.

As the eruption advances, the face, being thickly beset with pustules, becomes very much swelled, the eyelids are closed up, so as to deprive the patient of sight, and a gentle salivation ensues, which towards the eleventh day is so viscid, as to be spit up with very great difficulty. In children, a diarrhoea usually attends this stage of the disease instead of a salivation; which is to be met with only in adults.

The vesicles on the top of the pimples are to be perceived sooner in the confluent small-pox than in the distinct; but they never rise to an eminence, being usually flatted in; neither do they arrive to a proper suppuration, as the fluid contained in them, instead of becoming yellow, turns to a brown colour.

About the tenth or eleventh day the swelling of the face usually subsides, the hands and feet beginning then to puff up and swell; and about the same time the vesicles break, and pour out a liquor that forms into brown or black crusts, which upon falling off leave deep pits behind them that continue for life; and where the pustules have run much into each other, they disfigure and scar the face very considerably.

Sometimes it happens that a putrescency of the fluids takes place at an early period of the disease, and shews itself in livid spots interspersed among the pustules, and by a discharge of blood by urine, stool, and from various parts of the body.

In the confluent small-pox, the fever, which, perhaps, had suffered some slight remission from the time the eruption made its appearance to that of maturation, is often renewed with considerable violence at this last-mentioned period, which is what is called the secondary fever; and this is the most dangerous stage of the disease.

It has been observed, even among the vulgar, that the small-pox is apt to appear immediately before or after the prevalence of the measles. Another curious observation has been made relating to

the symptoms of these complaints, namely, that if, while a patient labours under the small-pox, he is seized with the measles, the course of the former is generally retarded till the eruption of the measles is finished*. The measles appear, for instance, on the second day of the eruption of small-pox; the progress of this ceases till the measles terminate by desquamation, and then it goes on in the usual way. Several cases are however recorded in the Medical and Physical Journal, as likewise in the third volume of the Medical Commentaries, in which a concurrence of the small-pox and measles took place without the progress of the former being retarded.

The only diagnosis that is necessary is between small-pox and chicken-pox. In the latter the pustules commonly go back without coming to proper suppuration. Their number, size, appearance, and course, differ very essentially. There is great reason to suppose, however, that the one disease is sometimes mistaken for the other, which may account for many of the supposed failures of the vaccine inoculation.

The distinction is sufficiently apparent between chicken-pox and the small-pox when each of these diseases appears in its proper colours; but when the latter is peculiarly mild, and the former extraordinarily violent, which is sometimes the case, then all the discriminating marks are obscured.

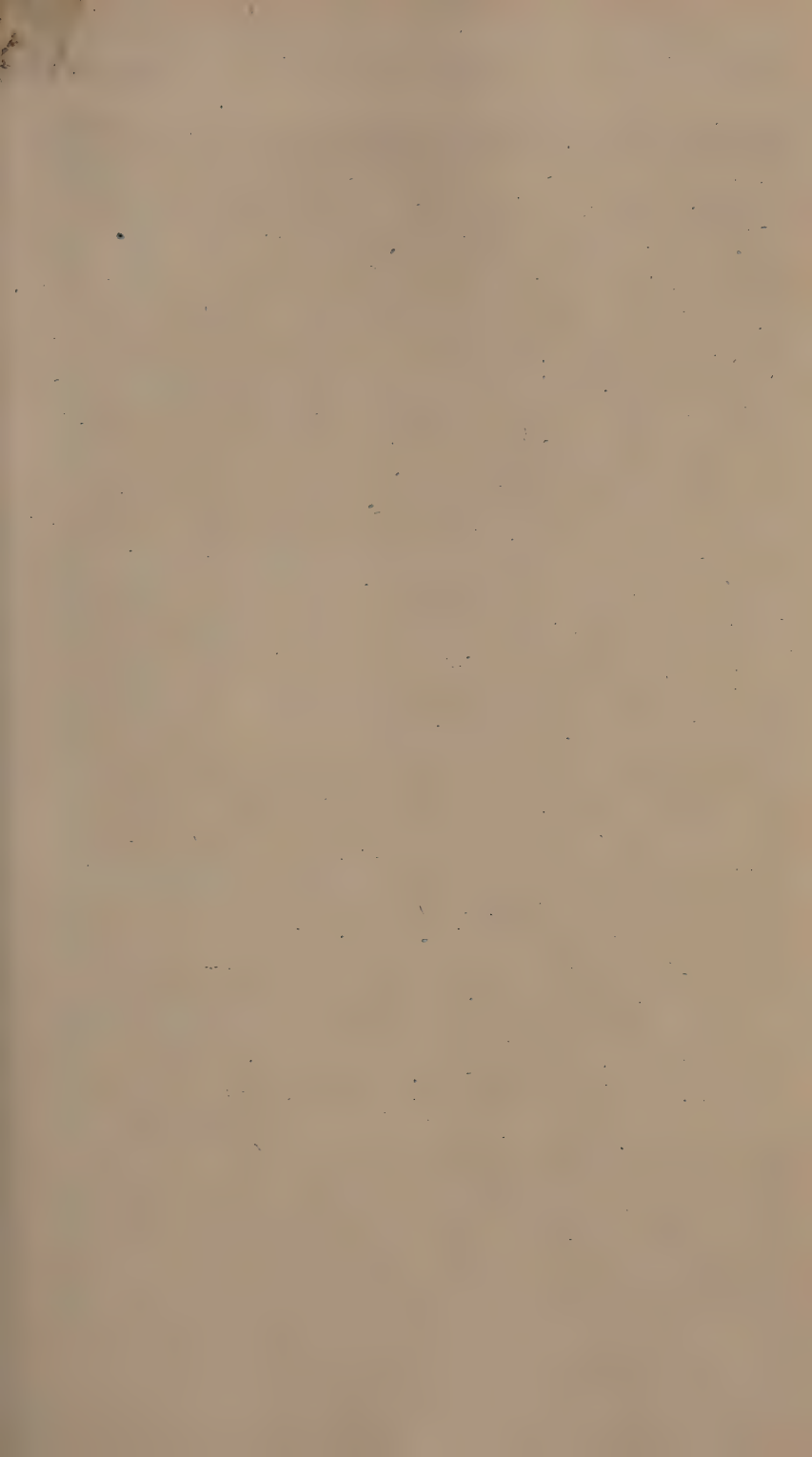
The distinct small-pox is not attended with danger, except when the eruptive fever is very violent, or when it attacks pregnant women, or approaches nearly in its nature to that of the confluent; but this last is always accompanied with considerable risk, the degree of which is ever in proportion to the violence and permanence of the fever, the number of pustules on the face, and the disposition to putrescency which prevails.

When there is a great tendency this way, the disease usually proves fatal between the eighth and eleventh day; but in some cases death is protracted till the fourteenth or sixteenth. The confluent small-pox, although it may not prove immediately mortal, is very apt to induce various morbid affections.

Both kinds of small-pox leave behind them a predisposition to inflammatory complaints, particularly to ophthalmia and pneumonia; and they not unfrequently excite scrofula into action, which might otherwise have lain dormant in the system.

The regular swelling of the hands and feet, upon that of the face subsiding, and its continuance for the due time, may be regarded in a favourable light. Violent eruptive fever, delirium, stupor, severe vomiting, dyspnœa, sudden disappearance of the eruption, subsidence of the swelling of the face or extremities, suppression of saliva, or depression of the pustules, followed by much prostration of strength, pallor of the skin, great anxiety, syncope, or convulsions, are appearances which denote the greatest danger. The

* See Dr. Duncan's Medical Commentaries, vol. i.



disease in its progress assuming a malignant character and typhoid type, and the pustules becoming livid, or being interspersed with petechiæ, portend a fatal termination.

The dissections which have been made of confluent small-pox, have never discovered any pustules internally on the viscera. From them it also appears, that variolous pustules never attack the cavities of the body, except those to which the air has free access; as the nose, mouth, trachea, the larger branches of the bronchiæ, and the outermost part of the meatus auditorius. In cases of prolapsus ani, they likewise frequently attack that part of the gut which is exposed to the air. They have usually shewn the same morbid appearances inwardly as are met with in typhus gravior, where the disease has been of a very malignant nature. Where the febrile symptoms have run high, and the head has been much affected with coma or delirium, the vessels of the brain appear, on removing the cranium and dura mater, more turgid, and filled with a darker coloured blood than usual, and a greater quantity of serous fluid is found, particularly towards the base of the brain. Under similar circumstances the lungs have often a darker appearance, and their moisture is more copious than usual.

When a person who has never had the small-pox is attacked with febrile symptoms after having been exposed to infection, or in consequence of the disease prevailing epidemically, we ought immediately to advise a strict pursuance of the antiphlogistic plan, debarring him from animal food, impregnating his drink with cooling acids, keeping his body open with gentle laxatives, and above all, exposing him freely to cool air, as, beyond all doubt, there is not a more effectual remedy for moderating the febrile heat produced by this disease than the application of cool air; and the more urgent the symptoms, the more will the patient stand in need of it; for where the ventilation is free, it is inconceivable how refreshing it proves, and how suddenly it is capable of reducing the pulse, and of moderating all the symptoms. The proper treatment of the patient from the very first attack of the disease will have great influence on the form which it assumes: if he be kept in a warm room, be loaded with bedclothes, and get warm drink, the fever will be severe and the eruption copious; while by an opposite treatment the disease may be rendered mild from the beginning.

In the early stage of small-pox, and during the eruptive fever, when the symptoms run high, we may, in addition to exposing the patient freely to cool air, recommend washing the body partially or generally with cold water. As the quantity, as well, perhaps, as the quality of the pustules depends greatly on the violence and duration of the eruptive fever, and, as by mitigating the one, we render the other more favourable, it would seem really advisable, as soon as a person is seized with variolous fever, wherein the febrile symptoms are any way high, to have cold water thrown over the body every four or six hours; which plan

may be continued until the eruption is completed. The safety and utility of the remedy are recorded in the thirteenth number of the Edinburgh Medical Journal, and are confirmed by my own experience. When had recourse to on the attack of variolous fever, it usually mitigates the headach, pain in the back, and other febrile symptoms; a slow and gentle perspiration succeeds, and a mild eruption takes place. Where it is resorted to after the small-pox have made their appearance, and by their quantity and the duration of the fever a confluent pock is expected, the cold bath seems not only to moderate the febrile symptoms, but likewise to diminish the number of the pustules, and in doing so greatly to lessen the danger of the disease.

The temperature of the patient's chamber should always be such that he may experience no disagreeable degree of heat, but rather a sensation of cold; and except he complains of being chilly, we need not be afraid of carrying the cool regimen too far.

He should lie on a mattress covered with only a few bedclothes, a feather-bed being apt to occasion too great an accumulation of heat. If convenient, he should have an apartment to himself, as the heat of a crowded room would be sure to prove injurious; and his body-linen, as well as that of the bed, should be shifted frequently.

In many instances, little more will be requisite than to pursue the steps which have been advised; but sometimes the fever and general inflammation run so high (particularly in adults of a plethoric and robust habit) as to be accompanied with great heat and dryness of the skin, redness of the face and eyes, considerable difficulty of breathing, acute pain in the head, stupor, or delirium; in which case it may be necessary to take away a little blood; but in resorting to this operation, great prudence is necessary, for should a fever of a malignant nature or putrid tendency accompany the disease, bleeding might prove highly injurious. Indeed, it might perhaps be the best practice to recommend it only in those cases where the effects expected from it cannot be procured by other remedies; and even in these local blood-letting by scarification of the temples, and cupping-glasses, or the application of leeches, ought to be preferred. Where the eyes look red and fiery, or coma prevails, topical bleeding may prove a valuable remedy.

The same caution should be observed with respect to a use of purgatives. For the purpose of diminishing excitement in the distinct small-pox, they may prove serviceable if administered in moderation; but if the accompanying fever is of the typhoid kind instead of synocha, then these and other antiphlogistic remedies are by no means warrantable. To dislodge the contents of the intestinal tube in such cases where costiveness prevails, we should only employ the most gentle laxatives, such as the neutral salts, with the occasional use of emollient clysters.

On the coming on of the fever, the stomach in some cases is

much disordered, and a constant nausea, or frequent vomiting, is apt to arise: to obviate which, it will be proper to give a gentle emetic, working it off with a few draughts of chamomile-tea.

It is no uncommon occurrence for convulsive fits to attack children some short time previous to the appearance of the eruption, which are apt to alarm those who are not conversant with the disease. In this instance little more will be requisite, in general, than to admit cool air freely to the child; but should they occur at a very early period of the disorder, and be repeated frequently with any violence, they then are attended with considerable danger, and ought to be removed, if possible, by giving opium in doses proportioned to the age of the child. About five drops of the *tinctura opii* will be sufficient for a child of a year old, about eight drops for one of two years old, and so on in a regular gradation.

Blisters are sometimes used in cases of this nature; but from the great length of time which elapses previous to their producing any effect, they seldom prove serviceable.

In those instances where the eruption does not come out kindly, it has been advised to immerse the whole body for a short time in a warm bath; but perhaps it may be more proper only to put the feet and legs into warm water at first, using at the same time a more generous diet; and should these means fail, the other mode of proceeding may then be adopted.

If there be great irritability and restlessness, opium in small quantities, either with the saline mixture, or a grain or two of antimonial powder, will be serviceable.

Where the febrile symptoms run high after the appearance of the eruption, we should give small and frequently repeated doses of antimonials, as advised under the head of Simple Continued Fever.

With the same view of lessening febrile heat and excitement, we may employ refrigerant medicines, such as nitre and saline draughts, administering the latter in the act of effervescence. Cold diluents, such as lemonade, imperial, &c., may be taken freely to allay thirst.

It will likewise be proper to avoid heat, and to expose the body to cool air. The cool regimen, in its fullest extent, is however by no means so necessary after the completion of the eruption, or where the fever has almost or wholly disappeared, as before. At the same time we must be careful to avoid the opposite and more dangerous extreme of relaxing too suddenly in the employment of the cool regimen. The use of laxative medicines, or clysters, as far as is necessary to prevent costiveness, is to be continued; and with regard to the application of cold, it should at this period be regulated by the patient's feelings.

If, on the other hand, the febrile symptoms continue considerable, notwithstanding the appearance of the eruption, the plan of treatment must not be relaxed. The continued use of gentle

cathartics and the cool regimen is then necessary; at an early period they are the best means of moderating the eruptive fever; they are now the most effectual for preventing the appearance of the secondary, which is always to be feared where the remission on the completion of the eruption is inconsiderable.

When a degree of cynanche is present, gargles and the inhalation of warm steam may be used.

In those cases where the pustules contain a thin watery fluid, and are accompanied with great soreness, uneasiness, loss of strength, and lowness of the pulse, the cinchona bark should be given in large doses, and be frequently repeated; and although it may perhaps increase the difficulty of breathing, and render the expectoration a little more difficult, still its good effects in obviating the symptoms of irritation, and the tendency to putrescency, will greatly overbalance the former. To assist the effects of this bark, a free use of wine-whey ought to be allowed.

In the confluent small-pox, particularly where there is a putrid tendency, where the pustules are filled with a bloody water, or where petechiæ are interspersed among them, we must also have recourse to the bark of cinchona joined with wine, together with acids, all kinds of which have been much employed in this form of the disease, but more particularly the muriatic and sulphuric, as noticed under the head of Typhus Gravior. Where hæmorrhages arise, we may give alum in addition to these remedies.

If the eruptions, after having made their appearance, strike in suddenly, or if the disease has arisen in a person of lax fibres, and is attended with a weak low pulse, and a sinking in of the pustules, then, besides allowing a liberal use of wine-whey, we should apply cataplasms to the soles of the feet, and blisters successively to different parts of the body, paying no regard to their being covered with pustules. Camphor, ammonia, musk, and aromatics, will likewise be advisable medicines. The warm bath will also be proper.

Where the suppuration in the pustules does not go on kindly, owing to the want of rest, it will be necessary to give opiates. About forty drops of the tinctura opii may be administered to an adult every night at bed-time, and one or two teaspoonsful of the syrupus papaveris somniferi to young children. If opiates are given when the excitement is considerable, or if they are found to induce coma, their use will certainly be improper; but in all other cases, more particularly during the maturing stage, in the confluent small-pox, a quantity of opium, sufficient to allay restlessness, provided care be taken, by administering gentle laxatives, to prevent its constipating effects, will be sure to prove beneficial.

The secretion from the glands of the mouth and throat in the confluent small-pox, usually goes on without the help of medicines until near the time of the completion of the suppuration, so that it is only necessary to defend the parts from the matter secreted by

giving mucilaginous drinks, such as barley-water, linseed-tea, or a solution of gum. acaciæ; but towards the time of its being completed, the secretion is apt to become so thick and viscid, as to be expectorated with the greatest difficulty, and often even to endanger suffocation. In this case we should give an emetic*, after which the mouth and throat must be washed out frequently with some proper gargle, as below †, or as advised under the head of Inflammatory Quinsy. If the emetic does not afford a permanent relief, we may then apply a blister to the external fauces with some prospect of advantage.

When the swelling of the face begins to subside, if we should find that the extremities do not become puffy and swelled, as they ought to do, cataplasms and blisters may be applied to them, to excite inflammation.

Determination to the head or chest, or other viscera, requires blisters, pediluvium, and sinapisms to the feet.

If a strangury or suppression of urine should ensue in the course of the disease, as sometimes happens, it possibly may be relieved by making the patient walk barefooted several times across the floor, and by giving him small doses of nitre at the same time. Dashing cold water on the legs, as is sometimes practised to solicit the alvine discharge, may also be tried. Should these means fail in affording relief, we ought then to resort to the other remedies recommended under these particular heads.

Obstinate vomiting, which in this disease often proves a very troublesome as well as dangerous symptom, is most effectually allayed by saline medicines, taken in the act of effervescence, and joined with opium‡.

Profuse diarrhœa is a troublesome occurrence in the confluent small-pox, particularly in children: but unless this symptom produces a dangerous degree of debility, we should be cautious in checking it; and even when it does occasion considerable debility, the safest plan will be to endeavour to moderate it by very gentle astringents and tonics. There is perhaps no instance, except towards the termination of the disorder, in which the diarrhœa

* 1. R Antimon. Tartarizat. gr. jss.

Aq. Fontan. f. 3j.

Oxymel. Scillæ, f. ʒss. M.

ft. Haustus.

† 2. R Infus. Rosæ Comp. f. ʒviij.

Mel. Optim. f. ʒss.

ft. Gargarisma. M.

‡ 3. R Potassæ Aerati, ʒi.

Aq. Cinnam. f. 3x.

Tinct. Opii, ℥ viij.

Syrup. Cort. Aurant. ʒj. M.

ft. Haustus, quarta quaque hora adhibendus
in actu effervescentiæ cum cochleare mag-
no succi limonis.

* 1. Take Tartarized Antimony, one grain
and a half.

Pure Water, one ounce.

Oxymel of Squill, half an ounce.

Mix them for a draught.

† 2. Take Compound Infusion of Roses,
seven ounces.

Honey, half an ounce.

Mix them for a gargle.

‡ 3. Take Aërated Potass, one scruple.

Cinnamon Water, ten drachms.

Tincture of Opium, twelve drops.

Syrup of Orange Peel, one drachm.

Mix them, and let this draught be given
every fourth hour with a table-spoonful of
lemon juice during the effervescence.

can be safely stopped by astringents, and then it is to be done cautiously; and when these medicines, either conjoined with opium, or of themselves, produce too sudden an effect, it must be counteracted by gentle laxatives.

In all cases where there is a propensity to sweating, after the eruptive fever has passed, a cool regimen will be particularly necessary.

In the distinct small-pox there ensues little or no secondary fever; but it regularly attends on the confluent, and is always in proportion to the number of pustules, proceeding probably from an absorption of the matter. This being the case, it may be advisable to open every pustule as soon as the suppuration in it is completed; and in order to moderate the fever, as well as to prevent hectic symptoms, and after-suppurations from arising, we ought to employ mild cathartics, so as to keep the bowels regularly open.

If, at the approach of the secondary fever, the pulse is quick, hard, and strong; the heat very great, the head much affected, and the breathing laborious, a quantity of blood, proportioned to the urgency of the symptoms, may probably be taken with safety, by means of scarifications, or leeches applied to the part most affected; but a use of gentle cathartics, and other antiphlogistic means, seems much more advisable. If, on the contrary, the patient is faint, the pustules look pale and much indented, and the extremities feel cold, with other symptoms of irritation, the fever is then to be considered as of the typhoid kind; and the proper remedies to be employed are cinchona bark, in whatever form it is found to sit easiest on the stomach, conjoined with wine and aromatics, together with mineral acids, opium, and artificially prepared pure air, or oxygen gas.

To prevent the face from being marked after the confluent small-pox, it has been recommended to bathe it three or four times a day with warm milk and water, and on the seventh or eighth day to apply over its whole surface a mask made of fine cambric, thinly spread with a soft liniment, composed of olive oil, white wax, and prepared lard, or with the unguentum cetacei, so as to exclude the external air; which application is to be renewed twice or thrice a day.

When the pustules are numerous on the face, it sometimes happens that the eyes become much affected, and that a loss of sight is the consequence. In those cases, therefore, where the face is much beset with pustules, the use of mild and gently astringent collyria, as advised under the head of Ophthalmia, should never be neglected. To prevent the eyelids from adhering together in such cases, it may be necessary to bathe them from time to time with warm milk, and to besmear them frequently with a little emollient ointment of any kind.

The small-pox, particularly when it proves severe, is apt, in habits disposed to scrofula, to excite that disorder into action,

when it otherwise might not have shewn itself. Frequent instances of this nature occur in practice, and prove obstinate to the practitioner, as well as distressing to the patient. In all such cases we must resort to the means advised under that particular head.

In the confluent small-pox, as well as the distinct, the patient's strength must be supported by food of a light nutritive nature, such as panado, bread-pudding, preparations of sago, arrow-root, roasted apples, &c.; and for common drink he may take thin gruel or barley-water gently acidulated, together with a little wine- whey now and then, when the febrile symptoms do not run high. If the accompanying fever is of a typhoid nature, a liberal use of wine will be proper.

OF INOCULATION.

EXPERIENCE has taught us that by applying variolous matter to a scratch or wound, so as to occasion an absorption, we shall in general procure fewer pustules and a much milder disease than when the small-pox is taken in the natural way.

Notwithstanding these evident advantages, objections have been raised against inoculation, on the score that it exposes the person to some risk, when it is possible he might have passed through life without being attacked by the disease in question; but in reply it may be urged, that he will be exposed to much greater danger from the intercourse which he must have with his fellow-creatures, by taking the disorder in the natural way.

In objection to inoculation, instances have been adduced to support the probability of a person's being liable a second time to the small-pox, when produced at first by artificial means; but such instances are very rare indeed, and we may safely conclude, that in most of those cases the matter used was not variolous, but that of some other eruptive disorder, such as the chicken-pox; which, when severe, may be mistaken for the small-pox by those who are not very conversant with the difference between them.

It has been computed that a third of the adults die who take this disease in a natural way, and about one-seventh of the children; whereas of those who receive it by inoculation, and who are properly treated afterwards, the proportion probably is not greater than one in five or six hundred.

Although inoculation for the small-pox may have been beneficial to individuals by greatly lessening the chance of death, yet it may safely be asserted that it has proved of no benefit to the community at large, but the reverse; which is evident by the bills of mortality, as they clearly prove that the disease of small-pox has increased in England since the introduction of inoculation, in the proportion of 19 in every 100.

This has arisen in a great measure from the want of some laws of exclusion, analogous to those of quarantine, by which those who produce the disease by inoculation should be prohibited from exposing the inoculated persons in the way of such as are liable to the infection. A recent decision in the Court of King's Bench, however, has shewn, that such an exposure, where it produces the disease in others, is a misdemeanour by common law, and that those who thus trespass on the community, and are guilty of the act, are liable to imprisonment.

The practice of inoculating is generally supposed to have been introduced into Britain from Turkey, by Lady Mary Wortley Montague, about the year 1721, whose son had been inoculated at Constantinople during her residence there, and whose infant daughter was the first that underwent the operation in this country. Some letters, however, of Dr. Williams, Mr. Owen, and Mr. Wright, which may be seen in the Philosophical Transactions for the year 1722, assert, that inoculation was well known in the south of Wales at that time, and had been of long standing. It seems likewise to have been practised in the Highlands of Scotland, before its introduction into England.

Mr. Mungo Park, in his travels into the interior of Africa, found that inoculation had long been practised by the negroes on the Guinea coast, and nearly in the same manner, and at the same time of life, as in Europe.

Where inoculation really originated is a matter of doubt, although it has been ascribed to the Circassians, who employed it as a mean for preserving the beauty of their women. It is more than probable that accident suggested the expedient among the different nations to whom the small-pox had long been known, independently of any intercourse they had with each other: and what greatly adds to the probability of this conjecture is, that in most places where inoculation can be traced back for a considerable length of time, it seems to have been practised chiefly by old women before it was adopted by regular practitioners.

Many physicians held the practice of inoculation in the greatest contempt at first, from its supposed origin; others again discredited the fact; while others, on the testimonies of its success in distant countries, believed in the advantages it afforded, but still did not think themselves warranted to recommend it to the families they attended; and it was not until after the experiment of it had been made on six criminals, (all of whom recovered from the disease and regained their liberty,) that it was practised in the year 1726 on the royal family, and afterwards adopted as a general thing.

To ensure success from inoculation, the following cautions should strictly be attended to:—

1st, That the person should be of a good habit of body, and

free from any disease, apparent or latent, in order that he may not have the distemper and a bad constitution, or perhaps another disorder, to struggle with at the same time.

2dly, To enjoin a temperate diet and proper regimen; and, where the body is plethoric, or gross, to make use of gentle purges, together with mercurial and antimonial medicines, as hereafter mentioned.

3dly, That the age of the person be as little advanced as possible; but not younger, if it can be avoided, than four months.

4thly, To choose a cool season of the year, and to avoid external heat, either by exposures to the sun, sitting by fires, or in warm chambers, or by going too warmly clothed, or being much in bed.

5thly, To take the matter from a young subject who has the small-pox in a favourable way, and who is otherwise healthy and free from disease; and when fresh matter can be procured, to give it the preference.

Where matter of a benign kind cannot be procured, and the patient is evidently in danger of the casual small-pox, we should not, however, hesitate a moment in recommending inoculation from any kind of matter that can be procured, as what has been taken in malignant kinds of small-pox has been found to produce a very mild disease. The mildness or malignity of the small-pox appears, therefore, to depend little, if at all, on the inoculating matter. Variolous matter, as well as the vaccine, by being kept for any length of time, particularly in a warm place, is apt, however, to undergo a decomposition by putrefaction, and then another kind of contagious material has been produced.

In inoculating, the operator is to make the slightest puncture or scratch imaginable in the arm of the person, rubbing that part of the lancet which is besmeared with the matter repeatedly over it, by way of ensuring the absorption; and in order to prevent its being wiped off, the shirt-sleeve ought not to be pulled down until the part is perfectly dry.

In preference to either puncturing the arm, or scratching it in a direct line, it has been recommended to introduce the lancet armed with the matter obliquely beneath the cuticle, so as to wound very slightly, and occasion little or no flow of blood. This mode may probably be preferable; but in withdrawing the point of the lancet, it will be right to press the wound with the finger, that the parts in contact with the matter may wipe it off the lancet, and thereby secure the success of the operation. When inoculation is performed in any of these ways, the application of a plaster or bandage will be unnecessary.

The matter of small-pox must be applied to a wound in order to induce the complaint. Dr. Rush informs us, he could not induce the small-pox by rubbing the matter on the entire skin; and he likewise mentions, that a negro girl took some variolous

matter mixed with a dose of physic, which produced no sensible effect.

A singular circumstance attending inoculation is, that when this fails in producing the effect, the inoculated part nevertheless sometimes inflames and suppurates, as in cases where the complaint is about to follow; and the matter produced in such cases is as fit for inoculation as that taken from a person actually labouring under the disease. The same happens very frequently in inoculation for the cow-pox.

If, on the fourth or fifth day after the operation, no redness or inflammation is apparent on the edges of the wound, we ought then to inoculate in the other arm in the same manner as before; or, for greater certainty, we may do it in both.

Some constitutions are incapable of having the disease in any form. Others do not receive the disease at one time, however freely exposed to its contagion, even though repeatedly inoculated, and yet receive it afterwards by merely approaching those labouring under it. Dr. Huxham* makes mention of cases of this nature. His words are: "I know an old nurse, and one apothecary, who for many years attended persons, and a great number too, in the small-pox, and yet never had them; nay, many that have industriously endeavoured to catch the infection, by frequenting the chambers of the sick, have done it without effect; and yet some of these persons, some months or years after, have been seized with the small-pox."

On the coming on of the febrile symptoms, which is generally on the seventh day in the inoculated small-pox, the patient is by no means to be suffered to take to his bed; but, on the contrary, must be constrained to keep up, and to be as much in the cool air as possible: and if thirsty, he may partake freely of some cooling antiseptic drink. As the number of pustules would probably be much increased by lying with another person, the patient should always have a bed to himself.

From the time that the matter is introduced into the system to the appearance of the eruptions, it will be necessary to observe a total abstinence from all animal food, and to give some gentle purgative every second or third day, if the person is of a gross habit; and on the intervening ones, he may take a dose of the following preparative powder:—Mix a drachm of prepared chalk with twelve grains of hydrargyri submurias, and one grain of tartarized antimony, which for an adult may be divided into three doses, and for a child of a year old, into twelve.

Some late experiments might induce us to believe that preparation has little or no effect on the future eruption, and that the cause of its mildness, in the inoculated small-pox, is to be ascribed to the operation itself, independent of any thing else. Mons. Deserts, in a sitting of the French National Institute, is said, how-

* See his Treatise on Fevers, Small-Pox, &c.

ever, to have adduced a number of facts to prove that the natural small-pox is rendered much milder by the use of mercurial remedies, and probably the inoculated disease may likewise be influenced by them. Indeed, it appears from the experiments of Van Woensel, that the submuriate of mercury, given as an alterative for some days before inoculation, and till the eruptive fever commences, does with certainty render the disease mild. A singular circumstance, mentioned by the same author, is, that this preparation of mercury, triturated with variolous matter, incapacitates it from conveying the disease by inoculation.

The mode of treating the small-pox being the same, whether it arises naturally or from inoculation, a reference must be had to the plan which is laid down in the preceding pages; and as purging is not less necessary after the small-pox by inoculation than by the natural way, it ought by no means to be neglected.

Various plans have been proposed with a view wholly to banish the casual small-pox. Dr. Haygarth* has bestowed much attention on this subject; and were the regulations pointed out by him to be rigidly enforced, there is reason to believe they would be found sufficient for the purpose. A surer and more effectual way, however, to eradicate the disease, is by inoculating with vaccine matter every adult who never has had the small-pox; as likewise every child soon after its birth.

It has frequently been attempted to communicate the small-pox and measles to quadrupeds by inoculation, but in vain.

VARIOLÆ VACCINÆ, OR COW-POX.

IN many of the dairy counties it had been long known that the cows are liable to an eruption on their paps or udders which was occasionally communicated to the hands or arms of those who milked them, producing an ulcer, and some degree of fever; and it had been observed by the people of those counties, that those who had gone through this disease, known by the name of cow-pox, were not liable to the small-pox.

The disease had not, however, undergone any medical investigation, until the late Dr. Jenner, then of Berkley, in Gloucestershire, paid particular attention to it. He very satisfactorily ascertained that it was a much milder disease than the small-pox, and that the fact was true, that in general it secured those who had been infected with it from afterwards being liable to variolous infection. He also observed that the vaccine-pox is not infectious but by inoculation; and that on this account it might be inoculated in a family without endangering others: a circumstance of the greatest importance. On the suggestions of Dr. Jenner, many

* See his Sketch of a Plan to Exterminate the Casual Small-Pox from Great Britain.

surgeons were induced to adopt the practice of substituting the one disease for the other, and its efficacy is in most cases now fully established.

With respect to the origin of the disease in the cow, we are informed by Dr. Jenner, that he traced it to the diseased heels of horses which had been affected with the grease; and by the person appointed to apply the dressings to them not paying a due attention to cleanliness, and incautiously bearing his part in milking the cows, with some particles of the infectious matter adhering to his fingers, he has communicated the disease to them. From numerous experiments made, however, at an early period, by the late Dr. Woodville, and by Mr. Coleman, Professor at the Veterinary College, with the matter of grease, taken in the various stages of that complaint, no such effect has been produced upon cows. Neither were inoculations with this matter, nor with several other morbid secretions in the horse, productive of any effects upon the human subject, which by no means accord with the facts adduced by Dr. Jenner on this point.

Some communications through the medium of the Medical and Physical Journal (see vol. iv. pages 381 and 466), in consequence of still later experiments, seem however to give support to Dr. Jenner's opinion as to the origin of the disease.

On its first investigation, some circumstances led to the supposition that the cow-pox and small-pox were originally one and the same disease; the latter being derived from the animal at some remote period, and having undergone, in the lapse of years, and by the influence of various constitutions, the changes we now experience. Subsequent facts have, however, invalidated this opinion.

From various experiments, it appears that the vaccine disease and the small-pox are not susceptible of intermixture, but that each preserves its distinct character under all circumstances. At the Small-pox Hospital it has been noticed, that when the vaccine and variolous fluids are mixed together, and thus inserted, sometimes the vaccine pustule, at others the variolous, has been produced, each of them retaining its characteristic marks throughout. Again, it has been found, that when the two fluids are inserted separately, and so near together that the two pustules which follow spread into one, by inoculating with the fluid taken from one side of it, the vaccine pustule alone will be produced, while the fluid taken from the other excites the genuine variolous pustule, with the general eruption of small-pox on the body. Another point of dissimilarity between the variolous and vaccine diseases, is this: the inoculation of the former we well know supersedes the natural disease many days after exposure to infection.

The effect produced by submitting persons to the influence of variolous and vaccine matter at the same time, is, that they both prove effective; for the vaccine vesicle proceeds to its acmè in the usual number of days, and the maturation of the variolous pus-

tules is attended with a pustular eruption on different parts of the body: but when variolous matter is not inserted until the ninth day after the inoculation with vaccine matter, the action of the variolous seems to be wholly precluded.

The variolous and vaccine fluids, inoculated about the same time, restrain the action of each other. The vaccine vesicle, in this case, is smaller, and proceeds more slowly to its maturity, and the variolous pustules are small, hard, and shining, producing only a small particle of matter at their apices.

The nipples of the cow being once affected, the disorder is communicated to the dairymaids, and other assistants employed in milking, and by them it is spread through the farm, until at last most of the cattle experience its consequences.

The disease appears on the nipples of the cows in the form of irregular pustules, which on their first appearance are commonly of a colour somewhat approaching to livid, and are surrounded by an erysipelatous inflammation, according to the report of Dr. Jenner; but Dr. Woodville seems to think that it is rather an indurated tumefaction of the skin which surrounds the pustules, than an inflammation of an erysipelatous nature. Unless proper remedies are applied in time, these pustules soon degenerate into phagedenic ulcers, which prove extremely troublesome; the animals then become much indisposed, and the secretion of milk suffers a considerable diminution.

Inflamed spots now begin to appear on different parts of the hands and wrists of the domestics employed in milking, which run on quickly to suppuration, assuming at first the appearance of small vesications produced by a burn. Most commonly they come out about the joints of the fingers, and at their extremities; but whatever parts are affected, if the situation will admit, these superficial suppurations put on a circular form, with their edges more elevated than their centre, and of a colour distinctly approaching to blue. In consequence of absorption, tumours appear in each axilla, the system becomes affected, the pulse is quickened, and rigors, with general lassitude and pains about the limbs and loins, with a vomiting, come on. In some instances the head is much affected, and a delirium arises.

These symptoms, varying in their degrees of violence, usually continue for three or four days, leaving ulcerated sores about the hands, which from the sensibility of the parts are very troublesome, and commonly heal slowly, becoming not unfrequently phagedenic, like those from which they sprung.

The lips, nostrils, eyelids, and other parts of the body, are likewise affected sometimes with sores, in consequence of being heedlessly rubbed or scratched with the patient's infected fingers.

Dr. Jenner informs us, that he had never met with any case of the cow-pox, either taken naturally, or produced artificially, which proved fatal; but by Dr. Woodville we are told, that out of five hundred cases of inoculated cow-pox under his care, one proved

fatal, which was a child at the breast, on the eleventh day after the matter had been inserted in the arm.

From that occurrence, and a few cases in which the febrile symptoms ran high, this gentleman was at first very adverse to the vaccine inoculation; but from further trials he latterly gave it, with almost every other practitioner, a decided preference.

The few instances of death which have occurred from vaccine inoculation, since it has been more generally practised, may probably be referred with much justice to some unknown peculiarities of the constitution; to intervening disorders independent of the vaccine; and to inflammation excited by accidental causes in young children, especially when they have been ill fed and badly nursed—circumstances not uncommon among very poor people.

When the pustules are numerous, as sometimes happens where the disease has been received immediately from the cow, a considerable degree of fever attends; but when it has arisen from inoculation, few or no pustules are to be observed, except immediately round the wound in the arm; and little or no inconvenience is experienced.

A more general knowledge of the disease than what we had at first, has ascertained it to be an undoubted fact, that the vaccine virus is greatly modified, and rendered much milder, by passing through different habits; and that although the cow-pox has proved in many instances a severe disorder in those who received the infection immediately from the animal, still in a few instances only have the symptoms run high, or has the least inconvenience been experienced, where proper matter, taken from the human subject, was used for inoculation.

In the few cases which have been brought forward, where a numerous eruption, preceded by a fiery redness, took place, we should attribute it to something wrong in the habit of body: to the intervening of some other eruptive disease; or possibly to the having inoculated with matter which had undergone a decomposition, in consequence of putrefaction, or some other cause not obvious.

A use of medicine seems wholly unnecessary in the cow-pox, except in those cases of the natural disease where much febrile heat attends; and then the antiphlogistic plan ought to be pursued.

The vaccine virus is certainly of a very singular nature, inasmuch as that a person who has been infected by it, is generally found to be for ever after secure from the infection of the small-pox; neither exposure to variolous effluvia, nor the insertion of the matter into the skin, being capable of producing the disease. Many direct experiments, made by innumerable practitioners, prove that the susceptibility of the small-pox is in general totally destroyed by inoculating with the vaccine matter. The permanency of the effect was indeed a matter of some doubt, but that is now fully established. It appears from the Report of the Small-

Pox Hospital in London, that up to December, 1802, eleven thousand eight hundred patients and upwards have been vaccinated, of which number twenty-five hundred were afterwards *proved* to be secured from the natural small-pox, by receiving a further inoculation with small-pox matter, while they were at the same time exposed in an hospital full of its infection, without effect. It was said at first, that although the cow-pox destroyed the susceptibility of the small-pox, still it possessed not the same power with regard to itself, as a person might have the disease more than once. Instances certainly have been adduced of the cow-pox taking place a second time; but they are of very rare occurrence, and should be looked on as irregular. The same has happened with the small-pox.

In Dr. Jenner's first treatise he mentions that the small-pox is not always a security against the cow-pox, and that although the susceptibility of the virus of the cow-pox is for the most part lost in those who have had the small-pox, yet in some constitutions it is only partially destroyed, and in others it does not appear to be in the least diminished. A more intimate knowledge of the disease has convinced us of the fallacy of this opinion.

Soon after Dr. Jenner's first publication on the vaccine disease, a few instances were adduced, tending to invalidate his supposition of the preventive power of the cow-pox with regard to variolous infection; but these he considers to have been cases of a spurious disease, and therefore not affecting his general conclusion.

In using this term, he does not mean, however, to imply that there is a true and false cow-pox, but merely to express an irregularity or difference from that common form and progress of the vaccine pustule from which its efficacy is inferred. Those who perform vaccination ought therefore to be well instructed, and should have watched, with the greatest care, the regular process of the pustule, and learnt the most proper time for taking the matter.

A few cases of still later occurrence have also been brought forward by Mr. Goldson* of Portsmouth, and others, with the view of proving that the inoculated cow-pox is not a permanent security against the infection of the small-pox; but a failure in one or two cases out of more than thirty thousand, although ever so well substantiated, should be considered in no other light than as a casual irregularity, upon which no solid determination can or ought to be grounded. Instances of the like nature have been known to occur likewise among persons inoculated with variolous matter, and when they are met with, ought to be looked on as anomalous.

There can be little doubt, however, that some of the failures are to be imputed to the inexperience of the early vaccinators;

* See his Cases of Small-Pox subsequent to Vaccination.

and it is by no means unreasonable to expect, that further observation will yet suggest many improvements that will reduce the number of anomalous cases, and furnish the means of determining with greater precision when the vaccine disease has been effectually received.

Persons who have been vaccinated and passed through the cow-pox with all the usual accompanying symptoms, and who have afterwards taken the small-pox, of which a very few instances may have happened, have generally imperfect pustules, which die away in a few days, without exciting any constitutional complaint; but the matter taken from these pustules will communicate the small-pox. This circumstance has been brought forward by the anti-vaccinists, as a proof that persons who have had the cow-pox may afterwards take the small-pox by inoculation and otherwise: not making the proper distinction between local and constitutional infection, or perhaps not understanding how any one can communicate a disease to others with which he is not himself infected.

We are informed by Dr. Jenner that the sources of a spurious cow-pox are as follow:—

1st, That arising from pustules on the nipples or udder of the cow, which pustules contain no specific virus.

2dly, From the matter (although originally possessing the specific virus) which has suffered a decomposition, either from putrefaction or from any other cause less obvious to the senses.

3dly, When the matter is taken from an ulcer in an advanced stage, which ulcer arose from a true cow-pox: and,

4thly, He supposes a spurious disease to arise from matter produced on the human skin, from contact with some peculiar morbid matter generated by a horse.

The characteristics of the true cow-pox are as follow: viz. a circumscribed, circular, elevated eruption, surrounded by a red halo or efflorescence; smooth surface; brown, black, or mahogany and tamarind-stone-coloured, long-adhering scab.

From a chemical analysis of vaccine matter by some French physicians, it was found to consist of water and albumen.

The succeeding arguments have been urged in favour of inoculation for the cow-pox over that for the small-pox.

1st, Of several thousand persons who have had the inoculated cow-pox, only one or two have died.

2dly, Very few well-attested instances have been produced out of many thousands of the above persons, known to have had the inoculated vaccine-pox and who were subsequently inoculated for the small-pox, of this disease being afterwards taken; although many of these were also exposed to the infectious effluvia of the natural small-pox. And, traditionally, this fact has been established time immemorial with regard to the casual cow-pox.

3dly, It may be safely affirmed, that the inoculated cow-pox is generally a much slighter disease than the inoculated small-pox;

and that the proportion of severe cases in the latter is to the former as at least ten to one.

4thly, It does not appear that the genuine vaccine-pox can be propagated, like the small-pox, by effluvia from persons labouring under it. Hence, if the vaccine inoculation should be universally instituted in place of the small-pox, it is reasonable to conclude, that this most loathsome and fatal malady will be extinguished.

5thly, It does not appear that the vaccine poison, like that of the small-pox, can be conveyed so as to produce the diseases indirectly from diseased persons, by adhering to clothes, furniture, bedding, letters, &c. Hence no danger of its propagation in these channels is to be apprehended from the universal practice of the inoculation of the cow-pox.

6thly, It has been found, that a person whose constitution has distinctly undergone the vaccine disease, is in future unsusceptible of the same disorder. Hence no objection can be made to the new inoculation, as was once urged, on account of its being believed, that by the commutation of the small-pox for the vaccine-pox, an eruptive disease would be introduced, to which the same person would be repeatedly liable.

7thly, It does not appear that those who have already gone through the small-pox are susceptible of the vaccine disease, as was at first believed. Hence no objection can be urged on the score of persons who have already gone through the small-pox, being liable to a new infectious disease, by the introduction of the vaccine inoculation.

8thly, Experience shews, that there is no reason to apprehend the smallest chance of deformities of the skin from the vaccine inoculation.

9thly, The extensive practice of the vaccine inoculation, and the accounts of the disease in the casual way, do not shew that any other disease will be excited subsequently which is peculiarly imputable to the new practice.

On a review of these arguments, founded on facts, there can remain no doubt that the vaccine inoculation will soon wholly supersede and do away the variolous. Could all parents be persuaded to inoculate their children with the vaccine matter soon after birth, the small-pox might be entirely eradicated in time. The introduction of this species of inoculation generally throughout both the army and navy, and its extension to France, Spain, Germany, Russia, and every part of the Continent, as well as to both the Indies, fully stamp its value and efficacy, and give us reason to hope that it will shortly be adopted by every nation of the earth with whom we have the least communication. Vaccination has, indeed, penetrated to the remotest corners of the globe; and wherever it has been introduced, the increasing experience of every year has only served to confirm pretty generally a confidence in its efficacy. It has been recommended and adopted

by far the greatest and most respectable part of the profession, every where; but by a few individuals it has been obstinately opposed through interested motives.

In inoculating for the vaccine disease, we should carefully attend to the following circumstances:—

1st, That the matter should not be taken later than the ninth day of the disease.

2dly, That the fluid should be perfectly transparent, as it is not to be depended upon if it has become in any degree opaque.

3dly, That the matter, if not used immediately, should be allowed to dry gradually and thoroughly before it is laid by for future use.

4thly, That the punctures can scarcely be made too superficial, and on no account should more than one be made in each arm.

5thly, That attention should be paid to repress, as soon as may be, any excess of inflammation that may happen to arise; and this is best done by cold and restraining applications.

With respect to the operation of vaccination, it will be important to ascertain that the vesicle has not acted locally, but effected the desired change on the constitution; hence has originated the practice of testing by re-vaccinating during every period of the progress of the vaccine vesicle.

From the Report of the physicians of the Vaccine-Pox Institution, it appears that the matter of a single pustule, being mixed with one quarter of an ounce measure of warm water, such diluted matter excited as distinct a vaccine-pox by inoculation as an equal quantity of undiluted matter. A pox so excited was not attended with less inflammation or constitutional affection, than that excited by a large quantity of undiluted matter; which points out an easy method of inoculating several persons from a single vaccine-pock—a great conveniency indeed, when the poor to be inoculated at one time are very numerous.

VARICELLA, OR CHICKEN-POX.

THIS disease, like the small-pox, seems to depend upon a specific contagion, and affects a person but once during life.

The eruption is sometimes preceded by chilliness, succeeded by flushings and heat, pains in the head and back, thirst, restlessness, and a quick pulse; but at other times no such symptoms are perceptible. About the second or third day the pustules become filled with a watery fluid, which is never converted into yellow matter, as in the small-pox (to the milder species of which it seems, however, to bear some affinity); and about the fifth day they usually dry away, and are formed into crusts or scabs.

No danger ever attends the chicken-pox.

The small-pox and chicken-pox differ, in the eruption of the

former being preceded by a fever of a certain duration, while that of the latter is either preceded by none, or one of uncertain continuance; in the vesicles appearing much earlier in the chicken-pox than in the small-pox, and about the second or third day being filled with serum; in the matter of the former never acquiring the purulent appearance, which it always does in the distinct small-pox; and in the crusts which cover the pustules being formed about the fifth day, at which time those of the small-pox are not at the height of their suppuration.

These distinguishing marks it will be necessary to attend to, as there is great reason to suppose the chicken-pox has not only been sometimes mistaken for small-pox, but that its matter has been used for that of small-pox in inoculation, to which may be ascribed many of the supposed cases of small-pox having appeared a second time in the same person.

In general it is only necessary to make use of a spare regimen on the first appearance of the eruption, and to give one or two cooling purgatives afterwards; but should the febrile symptoms run high, it may then be advisable to make the patient take frequent small doses of some antimonial, with saline draughts and nitre, as advised under the head of Simple Fever, or the distinct Small-pox; drinking plentifully at the same time of cold diluting liquors, and keeping the body open with gentle laxatives or emollient clysters. The like treatment will also be proper in the swine-pox, which is indeed only a species of the varicella.

RUBEOLA, OR MEASLES.

THIS disease is an inflammatory infectious fever, attended by a cough, sneezing, defluxion of thin humours from the eyes and nose, and a determination of acrid matter to the surface of the body, shewing itself in red spots over every part of it, but which never come to any suppuration, as in the former disorders, but go away in a small mealy desquamation of the cuticle after a few days' continuance.

In systems of nosology several varieties of the measles are mentioned, but they may all be comprehended under two heads; the benign and malignant: the former attended with more or less of the symptoms of general inflammation, the latter accompanied by a putrid diathesis and typhoid fever.

The scientific Willan* divides rubeola into three species, viz., rubeola vulgaris, rubeola sine catarrho, and rubeola nigra; in the latter of which the papulæ suddenly assume a black or dark purple colour.

Scarlatina sometimes resembles the measles so exactly as not to be easily distinguishable; though this is a matter of great im-

* See his Description and Treatment of Cutaneous Diseases.

portance, because the method of cure in the two diseases is extremely different. The redness of the scarlet fever is more equally diffused than in the measles, and is not in distinct spots with the natural colour of the skin interposed; yet in a few cases it has been observed so. In the measles the eruption rises more above the skin, and occasions a manifest roughness to the touch, which is hardly observable in the scarlet fever, except a very little roughness sometimes in the arms. In the scarlet fever there is seldom a severe cough; the eyes do not water much, and the eyelids are not red and swoln; all which rarely fail to attend the measles. The time of the eruption is likewise different, for it appears in the scarlet fever both in the face and arms on the second day; but in the measles it begins only about the third day to be visible on the chin and breast, and does not come to the arms and hands till the fourth or fifth day.

The measles may prevail at all seasons of the year as an epidemic, but the middle of winter is the time they are usually most prevalent; and they attack persons of all ages, but children are most liable to them. They prove rather unfavourable to such as are of a plethoric or scrofulous habit. Like the small-pox, when genuine, they rarely affect persons but once, their contagion appearing to be of a specific nature. A recurrence of the measles has been disputed by some, but a number of examples are recorded by different writers where the measles took place twice*.

From a number of cases lately observed at New York, when the measles were very prevalent there, it appears that spurious forms of the disease, insufficient to protect the system from subsequent attacks, occur in a manner very analogous to the spurious appearances of the small-pox and of the variolæ vaccinae†. For many persons, who on former occasions of the measles prevailing, and after exposure to their contagion, had exhibited certain irregular appearances of febrile, catarrhal, and eruptive symptoms, mistaken for the true disease, were afterwards attacked with measles in an exquisitely genuine form. The fact is likewise noticed by Dr. Willan‡, and he mentions that the rubeola sine catarrho appears to be an unusually mild form of the disorder, which does not destroy the susceptibility to an attack in future. Two instances of its recurrence happened among his own children, at an interval of two years. In a later publication|| he informs us, that he has since seen other cases of the same kind, wherein the efflorescence without fever or catarrhal symptoms having declined, there appeared, on the fourth day from its commencement, a new efflorescence, and violent disorder of the constitution.

* See Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. iii.

† See the New York Medical Repository, vol. v. No. 3.

‡ See his Reports on the Diseases of London, 1799, p. 207.

|| See his Description and Treatment of Cutaneous Diseases, Order III. Part I.

The eruption of benign measles is usually preceded by a chilliness and shivering, succeeded by heat, thirst, anxiety, pains in the head, back, and loins, heaviness and redness of the face and eyes, with an effusion of tears, swelling of the eyelids, nausea, and probably a vomiting of bilious matter; and with these symptoms there are a dry cough, hoarseness, hurried respiration, difficulty of breathing, frequent sneezing, and a discharge of acrid water from the nostrils. The pulse is at the same time frequent and strong.

In alarming cases, spasms of the limbs, subsultus tendinum, delirium, or coma, supervene. This last symptom, however, so frequently attends the eruptive fever of measles, that by some practitioners it is regarded as one of its diagnostics.

In measles, as in other febrile diseases, the symptoms generally suffer some remission towards the morning, returning however in the evening with increased severity.

About the third or fourth day small red spots, somewhat similar to flea-bites, appear in clusters about the face, neck, and breast, and in a day or two more the whole body is covered with them. They do not rise into visible pimples, but by the touch are perceived to be a little prominent.

The febrile symptoms do not however abate on the appearance of the eruption, as happens in the small-pox; but, on the contrary, are usually much increased, and they do not cease till after the desquamation takes place. The cough, hoarseness, difficulty of breathing, and defluxion from the eyes and nostrils, seem likewise greatly aggravated.

On the fifth or sixth day the spots from a vivid red are changed to a brownish hue, and they begin to dry away about the face, never having proceeded to any kind of suppuration; about the eighth or ninth day they disappear on the breast, and other parts of the body, with a mealy desquamation of the cuticle. About this period it is no uncommon occurrence for a diarrhœa to ensue.

The malignant form of the disease is accompanied with typhus fever, and with petechiæ and other signs of putrescency, as enumerated under that head. Moreover, the eruption appears more early, and all the concomitant symptoms are in an aggravated form. The fauces not unfrequently assume the same appearance as in cynanche maligna, probably from a combination of the two diseases. Some cases of this nature have lately fallen under my care, two of which proved fatal.

The febrile and other symptoms being mild, a gentle diarrhœa, a free and copious expectoration, a moisture on the skin at the appearance of the eruption, and an early and free desquamation, denote a favourable termination of the disease; but a high degree of fever, hot and parched skin, hurried and difficult breathing, flushed countenance, unusually hard pulse, the energy of the system not proving sufficient to throw out the eruption to the surface of the body, and the mucous membrane of the larynx, trachea, and bronchial ramifications being invaded therewith, as happens some-

times in scarlatina, ulcerated fauces, severe diarrhœa, the vomiting continuing after the eruption, great pain in the head and eyes after it, considerable degree of coma or delirium, the eruption becoming of a livid hue, with great prostration of strength, small intermittent pulse, petechiæ, and other marks of putrescency, point out the highest degree of danger. The existence of typhoid symptoms, along with a severe pneumonic affection, always increases the danger.

The consequences attendant on the measles are frequently more to be dreaded than the immediate disease; for although a person may get through it, and appear for a time to be recovered, still pulmonary consumption and hectic fever shall afterwards arise and destroy him, or an obstinate ophthalmia will ensue.

Measles, as well as the small-pox, not unfrequently call into action a disposition to scrofula, where such happens to exist in the habit.

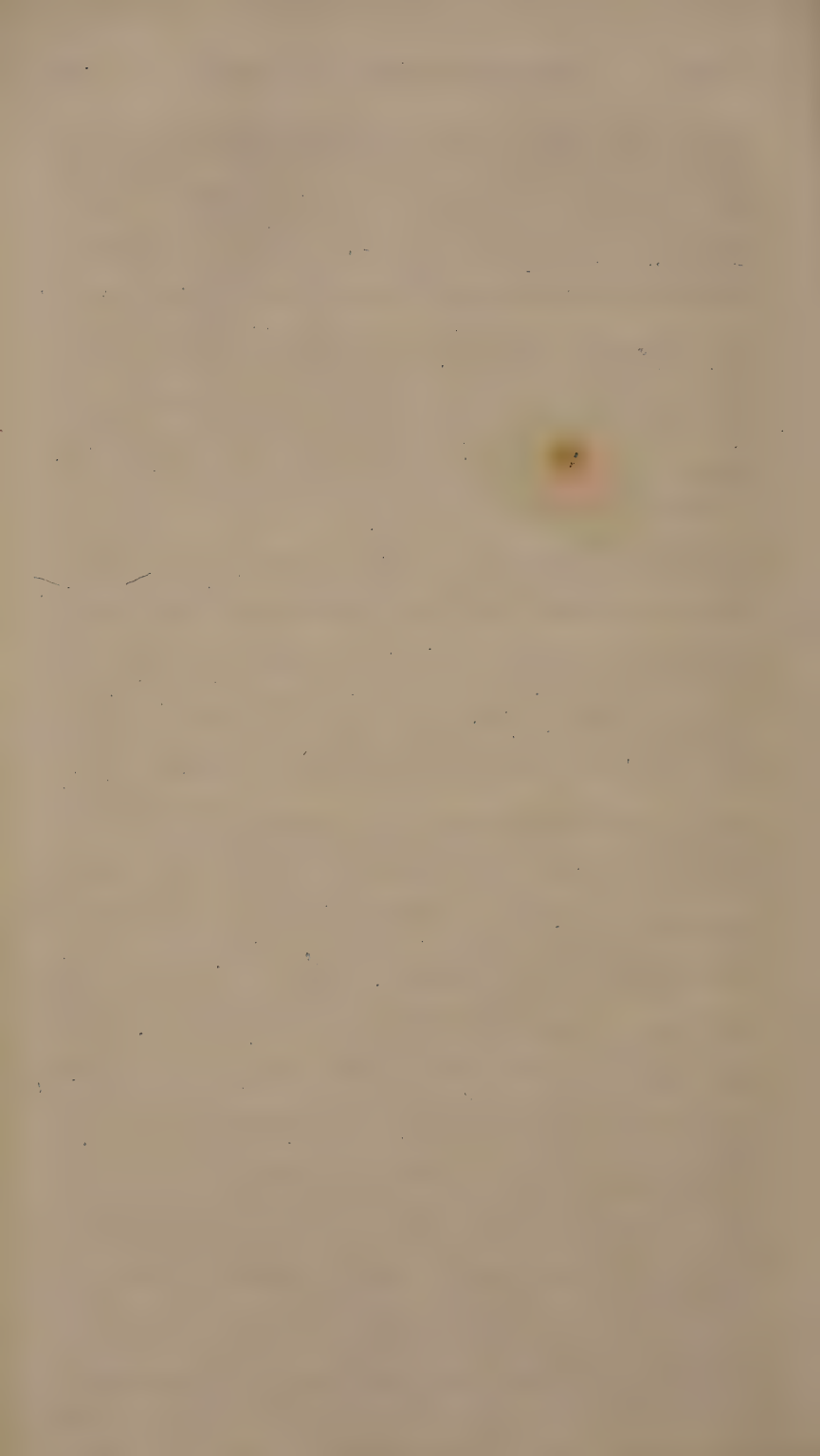
Another bad consequence of the measles is, that the bowels are often left by them in a very weak state; a chronic diarrhœa remaining, which has sometimes proved fatal. Dropsy has also been known as a consequence of measles.

A singular circumstance attending the contagion of the measles is, that if it be taken a sufficient time before inoculation for the small-pox, so that the eruption may commence before the variolous fever comes on, it stops the progress of the small-pox in the inoculated wound, and delays it till the fever of the measles has finished its career.

The morbid appearances to be observed on dissection of those who die of the measles, are pretty much confined to the lungs and intestines: the former of which always shew strong marks of inflammation, with sometimes a tendency to sphacelus.

Where the patient dies under the eruption, the trachea and larger branches of the bronchiæ, as in the small-pox, are often found covered with it, which may account for the increase of the cough after the appearance of the eruption.

In some instances the measles make their attack in a mild manner, and go through their natural course without medical aid; but in others the febrile symptoms run high, particularly after the appearance of the eruption, and are accompanied with a strong pulse, much coughing, great difficulty of breathing, and other symptoms of pneumonic inflammation; in which cases it will be proper to draw off a quantity of blood proportioned to the age and habit of the patient. We should, however, be careful never to draw blood unnecessarily, nor to take a greater quantity away than what may really be requisite. Topical bleeding by means of leeches to the chest or head, when symptoms of local inflammation in either of these are apparent, may be more advisable than venesection. So long as a considerable difficulty of breathing, a troublesome cough, or any other symptom indicative of inflammatory action in the lungs exists, the topical abstraction of blood



from the chest by means of leeches, or the scarificator with cupping-glasses, may be repeated from time to time. In those instances where the pulse is weak, and from the nature of the epidemic we may have strong reasons to apprehend an accompanying fever of the typhoid kind, or a disposition to putrescency, venesection ought not to be adopted.

During the whole course of the disease it will be highly proper to keep the body open; and therefore, if costiveness prevails, it should be obviated by giving cooling laxatives, such as the neutral salts and emollient clysters. Should the difficulty of breathing and oppression at the chest not be relieved by the bleeding and other antiphlogistic means, a blister may then be applied in the neighbourhood of the part or between the shoulders. In removing local inflammation, the application of a blister often proves a valuable remedy.

Where inflammation attacks the chest, a warm bath strongly impregnated with salt has been found a powerful subsidiary remedy in addition to bloodletting*.

The cough being usually very troublesome, it will be necessary to make frequent use of some demulcent pectoral, either of an oily or mucilaginous nature, as advised under the heads of Catarrh, Pleurisy, and Peripneumony, which will sheath the throat, and obviate that rawness and soreness of it, which are generally much felt. Besides using pectoral medicines, the patient may drink freely of barley-water, linseed-tea, or the decoctum hordei compositum, gently acidulated with lemon-juice. If the patient is oppressed with a tenacious phlegm threatening suffocation, the best way of dislodging it is to give an emetic.

Where the cough proves very troublesome, and is attended with great difficulty of breathing, or soreness at the chest, inhaling the steam arising from warm water and vinegar may prove serviceable. A pediluvium might be a good auxiliary.

If the febrile symptoms run high, and great heat, thirst, and restlessness prevail, small nauseating doses of antimonials may be given every two or three hours, as advised under the head of Simple Continued Fever, in order to determine to the surface of the body.

In this, as well as in other cases of excitement, it will be advisable to have recourse to nitre and saline draughts, along with antimonials, whenever the inflammatory symptoms run high.

When the cough harasses the patient much by night, so as to deprive him of rest, it may be necessary to give him an opiate about bed-time. The tinctura opii may be used for adults, combined with some diaphoretic†; but for children it will be better

* See Dr. Armstrong on Scarlet Fever, &c.

† 1. R. Liquor. Ammon. Acetat. f. ℥ss.

Aquæ Puræ, f. ℥j.

† 1. Take Solution of Acetate of Ammonia,
half an ounce.

Pure Water, one ounce,

to substitute the *syrupus papaveris*. Opiates are, however, to be administered with great caution in this disease, as well as in all other inflammatory ones, and ought never to be employed where there is much fever present, with great difficulty of breathing. When these symptoms have been removed by timely bleeding, aperient medicines, &c., and the cough and watchfulness are those only which are urgent, opiates will prove both safe and efficacious.

In formidable cases of measles, when the urgency of the cough, the quick, difficult, anxious, or laborious respiration, with a high fever, denote a dangerous disease, but in which bloodletting, or the exhibition of opium, may be thought equivocal, we may recommend full doses of the *tinctura digitalis**. In such cases the fever is allayed, respiration relieved, and the bowels relaxed by its means: whereas the very reverse is frequently the consequence of opium. Hence its superiority in many instances.

If a severe purging should arise, we may moderate it by giving astringents joined with opium (see *Diarrhœa*); but as an open state of the bowels proves serviceable, it ought not to be suppressed, unless it is violent.

When the eruption of measles disappears before the proper period, and great anxiety, and delirium, or convulsions, take place, the indication will be to restore the eruption to the skin. To effect this, immediate recourse must be had to the warm bath, blisters to the chest and legs, and the administration of wine properly diluted with warm water; ammonia, camphor, æther, and antimonials, will be the best medicines†.

Spirit. Æther. Nitrici, ℥ xxv.

Vini Antimon. Tart. ℥ xv.

Tinct. Opii, ℥ xxvj.

Syrup. Tolutan. ʒij. M.

ft. Haustus.

* 2. R Misturæ Camphoræ, f. 3x.

Spirit. Æther. Nitrici, f. 3j.

Tinct. Digitalis, ℥ xiv.

Syrup. Papaveris, f. ʒij. M.

ft. Haustus.

† 3. R Pulv. Antimon. gr. ij.

Camphoræ, gr. iij.

Ammonia Subcarbonat. gr. iv.

Confect. Cort. Aurant. q. s. M.

ft. Bolus, quartis vel sextis horis adhibendus.

Vel,

4. R Liquor. Ammonia Acet. f. ʒj.

Misturæ Camphoræ, f. ʒv.

Spirit. Æther. Sulph. C. f. ʒij.

Spirit of Nitric Æther, forty drops.

Wine of Tartarized Antimony, twenty-two drops.

Tincture of Opium, forty drops.

Syrup of Tolu, two drachms.

Mix them for a draught.

* 2. Take Camphor Mixture, ten drachms.

Spirit of Nitric Æther, one drachm.

Tincture of Foxglove, twenty-two drops.

Syrup of Poppies, two drachms.

Mix them for a draught.

† 3. Take Antimonial Powder, two grains.

Camphor, three grains.

Subcarbonate of Ammonia, four grains.

Confection of Orange Peel, a sufficiency to form a bolus, which is to be given every four or six hours.

Or,

4. Take Solution of Acetate of Ammonia, one ounce.

Camphor Mixture, five ounces.

Compound Spirit of Sulphuric Æther, two drachms.

Should the symptoms manifest a malignant kind of the disease, and a putrid tendency prevail, we must then adopt a very different mode of treatment from what has been advised for the inflammatory. The cure must be conducted on the general antiseptic plan by cinchona, wine, acids (particularly the mineral), and pure air, &c. — See Typhus Gravior.

Throughout the whole course of the measles the patient ought to be confined to his bed, and to avoid any exposure to cold air, which might repel the eruption; but in observing this precaution, he is not to run into the opposite extreme, and excite increased heat, either by loading himself with bed-clothes, or by not allowing a sufficient ventilation through his chamber. The degree of temperature should be regulated by the patient's feelings. Rubeola does not either require or bear the free application of cold, which is so potent a remedy for the most distressing symptoms of scarlatina; but nevertheless the propriety of coolness in the apartment and bed, as also in the drink of the patient, must be obvious.

A diluent and antiphlogistic diet being one of the best means of obviating inflammatory complaints, we ought to recommend it in the early stages of measles: but in managing it properly, we should recollect its tendency to produce debility, and in weak habits be careful not to push it too far. Where the disease shews a malignant and putrid tendency, a diet of this nature would be highly improper. In such cases a quantity of wine, proportioned to the age of the patient, the urgency of the symptoms, and the effect it produces, ought to be allowed, in addition to the bark of cinchona, mineral acids, and opiates.

After the disappearance of the eruption, it will be proper to give one or two doses of some cooling purgative. This practice, although disregarded by many, seems nevertheless worthy of attention, as ophthalmia and other troublesome complaints may probably be prevented by conforming to it.

If a difficulty in breathing, pain in the side, and cough, should ensue in consequence of the measles, it will be advisable to take away a proper quantity of blood, in order to remove the inflammatory state of the system which has been induced by the disease; besides which, the patient must pursue the other steps advised under the head of Incipient Phthisis Pulmonalis, making use of a milk and vegetable diet, breathing as pure an air as possible, and taking daily horse exercise; but he should carefully avoid cold.

As a weeping from the eyes and slight ophthalmia are apt to ensue after the measles, it may be right to wash them occasionally with a little rose-water, in which a few grains of the sulphate of

Vini Antimon. Tartarizat. \mathfrak{M} xx.
M.

ft. Mistura cujus sumantur cochlearia duo
magna secunda vel tertia quaque hora.

Wine of Tartarized Antimony,
thirty drops: shake them.

Of this mixture take two table-spoonsful every
second or third hour.

zinc have been dissolved, and to avoid exposure to any glaring light.

Having gone through the treatment of measles, it only remains to be observed, that the disease may be propagated by inoculation, as well as the small-pox. Dr. Home, of Edinburgh, appears to have been the first who actually made the experiment, and from not being able to collect either matter, or a sufficient quantity of broken cuticle at the time of desquamation to produce the disease, he drew blood from the most superficial cutaneous vein, where the eruption was thickest. This received on cotton, he applied to a wound made on each arm of the person to be inoculated.

We are informed by him, that he inoculated twelve persons in this way, in all of whom the operation succeeded equal to his hopes. The eruptive fever generally commenced six days after inoculation, and the symptoms of the complaint were milder than they generally are in the casual measles. The fever was less severe, the cough either milder or wholly absent; the inflammation of the eyes was trifling; they watered, however, as much; and the sneezing was as frequent as in the casual measles; nor did bad consequences follow any case of inoculated measles. No affection of the breast remained after it.

The chief difference between the casual and inoculated measles seemed to be the absence of any pulmonic affection at all periods of the latter.

It appears that Dr. Home tried another experiment. He put a piece of cotton, which had remained in the nose of a patient under the measles, into that of a healthy child, making him breathe through the infected cotton; but the experiment, although repeated, did not succeed in inducing the disease.

Notwithstanding Dr. Home's success, still inoculation for the measles is seldom or never practised. The few who have been induced to attempt it, have not, I believe, made quite so favourable a report of it; on the contrary, it has been said to have produced an aggravated disease.

When the measles prevail epidemically, it may be advisable to confine such children as have never had them to a vegetable diet, giving a gentle aperient once or twice a week. Children thus prepared may be likely to have a mild disease.

SCARLATINA, OR SCARLET FEVER.

THE characteristics of scarlatina are as follow:—The fever is the contagious synocha. About the fourth day of the disease the face is a little swelled; a florid redness in large spots, afterwards coalescing, spreads partially over the skin, and in three days more or so goes off in furfuraceous scales, often succeeded by anasarca. The disease takes its name from the colour of the patient's skin.

It is divided into three kinds: when unaccompanied with an

ulceration of the throat, it is named *scarlatina mitis*, or *simplex*: when attended with such an affection, it is called *scarlatina anginosa*: and when accompanied by symptoms of malignancy and putrescency, the term *scarlatina maligna* is applied to it. The two latter are, however, very frequently blended together.

It has been disputed, whether the scarlet fever and malignant sore throat ought to be esteemed different diseases, or only varieties of the same disease.

In my opinion they are the same *in specie*, which is confirmed by our finding that they are both epidemical at the same time: even in the same family, where a number of children have been ill, either together, or immediately after one another, some have had the distinguishing symptoms of scarlet fever, and others of the malignant sore throat. Indeed it is now pretty generally admitted, that *scarlatina*, in all its forms, as well as the *cynanche maligna*, is produced by the same specific contagion*.

There prevails much doubt amongst practitioners respecting the recurrence of *scarlatina*, some affirming that they have seen the disease recur in so manifest and unequivocal a form, as to leave no doubt in their minds as to its possibility, whilst others deny its ever affecting the same person a second time. Amongst the great number of persons who have been infected, a few may be admitted, I think, to have gone through it a second time: but persons who have once been attacked with it, are less susceptible than those who never have had it.

Scarlatina attacks persons of all ages, but children and young people are most subject to it, and it appears at all seasons of the year; yet it is more frequently met with towards the end of autumn, or beginning of winter, than at other periods, at which time it often becomes a prevalent epidemic.

Sudden changes from heat to cold, rainy weather, and indigestion, may predispose the body to be acted upon more readily by the infection.

As an epidemic, *scarlatina* does not always assume precisely the same appearance. This diversity depends probably, in part, upon the varying nature and constitution of *scarlatina* itself, independently of all extrinsic circumstances; in part, upon certain contingencies, which are common to all the inhabitants of a whole district of country: such as the season of the year, the temperature of the air, the mildness or inclemency of the weather, together with other unknown qualities of the atmosphere; and partly upon circumstances which apply to individuals subjected to the disease, their general habit of body and constitution, their particular state of health at the time of the attack, and their situation with respect to lodging, ventilation, and cleanliness.

We have, I think, just grounds for presuming that the different species of *scarlatina*, such as the *simplex*, *anginosa*, and *maligna*,

* See Dr. Willan on Cutaneous Diseases, Order iii.

all proceed from the same source, because, under the same roof, in large families, some individuals have the disease in one form, some in another, and about the same period. The difference may arise from constitutional circumstances, and not from any difference of the contagion. Scarlatina is of a very contagious nature. Simple contact, inoculation, and inhalation, are the different ways by which the infection, not only of scarlet fever, but of other contagious disorders, may be introduced into the human body. It is the opinion, however, of Dr. Blackburne*, that the chief and only avenues to infection, in common, are the mouth and nostrils; and, consequently, that to guard against its communication through these channels, is the principal, or only necessary precaution. He thinks that the introduction of infectious particles into the human body by simple contact is impossible; and to support this, he brings forward the testimony of the late philanthropic Mr. Howard, who made no scruple of going into the open air to the windward of a person ill of the plague, and feeling his pulse; as likewise that of Dr. Russell, who personally attended the sick in the plague, and felt the pulses of a great number. That infection by the simple contact of poisonous matter on the skin is far less ready to excite disease than when applied, in the subtle state of vapour, to the more irritable surface of the nostrils and bronchiæ, is indisputable; but that it proves universally innocuous under every state and condition of the body, may be doubted.

The disorders to which scarlatina bears the greatest resemblance are the measles and cynanche maligna; but from the former it may be distinguished by attending to the following characteristic marks, in addition to those noticed under the head of Rubeola.

The efflorescence in scarlatina generally appears on the second day of the fever; in the measles, it is seldom very evident until the fourth. It is much more full and spreading in the former disease than in the latter, and consists of innumerable points and specks under the cuticle, intermixed with minute papulæ, in some cases forming continuous, irregular patches; in others, coalescing into a uniform flush over a considerable extent of surface. In the measles the rash is composed of circular dots, partly distinct, partly set in small clusters or patches, and a little elevated, so as to give the sensation of roughness when a finger is passed over them. These patches are seldom confluent, but form a number of crescents, with large intervening portions of cuticle, which retain their usual appearance. The colour of the rash is also different in the two diseases, being a vivid red in the scarlatina like that of a boiled lobster's shell; but in the measles a dark red, with nearly the hue of a raspberry.

During their febrile stage, the measles are distinguished by an

* See his Observations on the Prevention and Cure of Scarlet Fever.

obstinate harsh cough, forcing up, in repeated paroxysms, a tough acrimonious phlegm; by an inflammation of the eyes and eyelids, with great sensibility to light; by an increased discharge from the lachrymal glands, sneezing, &c. Scarlatina is frequently attended with a cough, as also with redness of the eyes; but on minute observation, it will generally be found that the cough in scarlatina is short and irritating, without expectoration; that the redness of the eyes is not attended with intolerance of light; that the ciliary glands are not affected; and that, although the eyes appear shining and watery, they never overflow. In scarlatina there is usually a peculiar sensation of anxiety, depression, and faintness, in all cases which are attended with fever; whereas in the measles symptoms of general inflammation are to be met with, except where the disease appears under a malignant form.

The following are the chief distinctions between scarlatina mitis and cynanche maligna. The fever in the former is somewhat of an inflammatory nature, and is unattended with sloughy ulcerations in the throat: in the latter these are always to be observed, the breath is very fetid, and the accompanying fever is of the typhoid kind. In scarlatina the skin is of a brighter scarlet, smooth, and always dry and hot; in cynanche maligna it is red and pimply, the pimples being redder than the interstices.

Scarlatina mitis, like all other fevers, begins with languor, lassitude, confusion of ideas, chills, and shiverings, alternated by fits of heat. The thirst after a little time becomes considerable, the skin dry, and the patient is often incommoded with anxiety, nausea, and vomiting.

The alvine evacuations are most commonly of the usual quantity; the urine is high-coloured and turbid; and the pulse is weak, and varying from 100 to 120 strokes in a minute. In a few cases some slight affection of the fauces is perceived.

About the second or third day the scarlet efflorescence appears on the skin, which seldom produces, however, any remission of the fever. On the departure of the efflorescence, which usually continues out only for three or four days, a gentle sweat comes on, the fever subsides, the cuticle or scarf-skin falls off in small scales, and the patient gradually regains his former strength and health. Such is the disease in its mildest aspect.

In scarlatina anginosa the patient is seized not only with a coldness and shivering, but likewise with great languor, debility, and sickness, succeeded by heat, nausea, vomiting of bilious matter, soreness of the throat, inflammation and ulceration of the tonsils, uvula, and velum pendulum palati, a frequent and laborious breathing, and a quick, small, and depressed pulse. When the efflorescence appears, it brings no relief; on the contrary, the symptoms are much aggravated, and fresh ones arise.

In the progress of the disease, one universal redness, unattended however by any pustular eruption, pervades the face, body, and limbs, which parts appear somewhat swoln. The eyes and

nostrils partake likewise more or less of the redness; and in proportion as the former have an inflamed appearance, so does the tendency to delirium prevail. There is moreover an acrid discharge from the nostrils, which excoriates whatever part it falls upon.

On the first attack of scarlatina anginosa, the tonsils and uvula are much inflamed, but the inflammation is soon succeeded by dark-coloured sloughs, from three to five lines in diameter, or under the surrounding surface, and which conceal beneath them spreading gangrenous ulcers. These occasion the breath to be highly fetid. The patient is often cut off in a few days.

Even if he recovers, it will be by slow degrees, and probably anasarcaous swellings will ensue. In some instances, swellings of the submaxillary, parotid, or other small glands arise, and prove troublesome and tedious in suppurating.

The malignant form of the disease is characterized by the following appearances: its symptoms, on the first day, are nearly the same as in the scarlatina anginosa; but some of the following peculiarities are afterwards observable. The pulse is small, indistinct, and irregular; and the tongue, teeth, and lips, are covered with a brown or black incrustation. There is a dull redness of the eyes, with a dark red flushing of the cheeks, deafness, delirium, or coma. The breath is extremely fetid; the respiration rattling and laborious, occasioned partly by a viscid phlegm clogging the fauces; the deglutition is constricted and painful; and there is a fulness and livid colour of the neck, with a retraction of the head. Ulcerations are to be observed on the tonsils and adjoining parts, covered with dark sloughs, and surrounded by a livid base; and the tongue is often so tender as to be excoriated by the slightest touch. An acrid discharge flows from the nostrils, causing soreness, or chops, nay even blisters, about the nose and lips; the fluid discharged being at first thin, but afterwards thick and yellowish. The rash is usually faint, excepting in a few irregular patches; and all of it presently changes to a dark, or livid red colour. It appears late, is very uncertain in its duration, and often intermixed with petechiæ. In some instances the rash disappears suddenly a few hours after it is formed, and comes out again at the expiration of two or three days. In an advanced stage of the disease, where petechiæ and other symptoms characteristic of putrescency are present, hæmorrhages frequently break forth from the mouth and nose.

When scarlatina is to terminate in health, the fiery redness abates gradually, and is succeeded by a brown colour; and the skin becoming rough, peels off in small scales: the tumefaction subsides, and health is gradually restored. On the contrary, when it is to terminate fatally, the febrile symptoms run very high from the first of its attack, the skin is intensely hot and dry, the pulse is very frequent but small, great thirst prevails, the breath is very fetid, the efflorescence makes its appearance on the second day, or sooner, and about the third or fourth is probably interspersed

with large livid spots; and a high degree of delirium ensuing, or hæmorrhages breaking out, the patient is cut off about the sixth or eighth day. In some cases a severe purging arises, which seldom fails to prove fatal. Some again, where the symptoms do not run so high, instead of recovering, as is usual, about the time the skin begins to regain its natural colour, become anasarous, or fall into an atrophy, and are carried off in the course of a few weeks.

Scarlatina in its mild state is not usually attended with danger; but when it partakes much of the nature of cynanche maligna, or discovers a putrid tendency, it often proves fatal. The discharge of a highly acrid matter from the nose, diarrhœa, the fauces of a dark red or purple colour, without swelling, ash-coloured or brown specks, soon becoming ulcerated, great prostration of strength, delirium, coma, anxious difficulty of breathing, petechiæ, and hæmorrhages, are very unfavourable symptoms.

When scarlet fever is very mild and wholly unattended by any inflammation or ulceration in the throat, little more will be requisite than to keep the apartment clean and open; to enforce a light diet without animal food; to direct cooling acidulated liquors for common drink, and to administer gentle medicines suitable to the symptoms that present themselves.

In more severe cases, where the skin is very hot and dry, the pulse much accelerated, the head very painful, and advice is called for at the onset of the disease, the best step we can adopt, is to have recourse to affusion, or immersion in cold water, for the speediest and most effectual relief will be obtained by it. In private practice, where there often arises much difficulty in subduing prejudices, and we are prevented from making use of cold affusion, or immersion, we must be content to substitute simple ablution pretty generally over the whole body with a sponge dipped in equal quantities of cold water and vinegar.

Dr. Currie mentions in his Medical Reports, that he found the affusion of cold water to extinguish incipient scarlatina in repeated instances, so as to prevent either efflorescence or any affection of the throat from taking place. He says, "The plan that I follow, if called in at this early period, where the patient feels steadily hot, and the shivering having gone off, is to strip him quite naked, and dash four or five gallons of the coldest water over his naked body; the heat returning, it is sometimes necessary to use it ten or twelve times in twenty-four hours." During this time, he says, cold water and lemonade should be used as drinks, and the bowels opened, if necessary, by the submuriate of mercury. In a few cases he has thought it advisable to assist the affusion by the diaphoretic power of a solution of tartarized antimony. He adds, that in upwards of 150 cases he uniformly followed the practice here detailed, and with a degree of success so nearly invariable, that he could not contemplate it without emotions of surprise, as well as of satisfaction.

We are also informed by Dr. Mosman*, that during the hot stage of scarlatina he has seen the most happy effects derived from sponging the body over with cold vinegar and water, and by allowing a free current of air through the patient's chamber. He very properly cautions us, however, against such a practice, when the least chilliness prevails, or where there is a tendency to perspiration. In such cases, tepid water and vinegar may be substituted.

Some communications from Dr. Reid†, physician at the time to the Finsbury Dispensary, bear also ample testimony of the unequivocal efficacy and success which attended the use of cold and tepid ablution in many cases of scarlatina. He mentions, it ought to be kept in mind, that in an early stage of the disease, when the strength is not much reduced, when the skin is hot and dry, and where the febrile anxiety is considerable, cold washing is decidedly indicated. But when extreme debility has come on, after the fever has continued for several days; when the pulse is small and irregular, and the skin more relaxed, then the reaction produced by cold washing might prove too violent, and of course, in such cases, tepid sponging is preferable.

The experience which I have had, not only of the perfect safety, but likewise of the utility of both affusion and ablution with cold water at the onset of scarlatina, where there is great heat and dryness of the skin, with considerable febrile anxiety, and a rapid pulse, induces me to regard these remedies as means very likely to afford decided relief, and under such circumstances to recommend their being more generally adopted than what they are. In an advanced stage of the disease, tepid ablution will certainly be preferable.

On the first coming on of both scarlatina mitis and scarlatina anginosa, it would seem proper to administer an emetic of ipecacuanha, for the purpose of dislodging any mucus that may have accumulated in the throat. In the last, more particularly, I am fully convinced it ought never to be omitted; and probably a slight repetition of it might be the means of preventing any disposition to diarrhœa, which is so apt to arise, from a considerable quantity of acrid matter passing from the fauces into the stomach, and from thence to the intestines.

After vomiting, it will be proper to dislodge all feculent matter from the bowels by means of some gentle aperient‡; and during the remainder of the disease, if costiveness arises, it must be obviated by laxative clysters, administered from time to time, as

* See Dr. Duncan's Annals of Medicine for 1799, Article xii.

† See Medical and Physical Journal, vol. xi. page 27.

‡ 1. R Hydrargyri Submuriat. gr. iij.

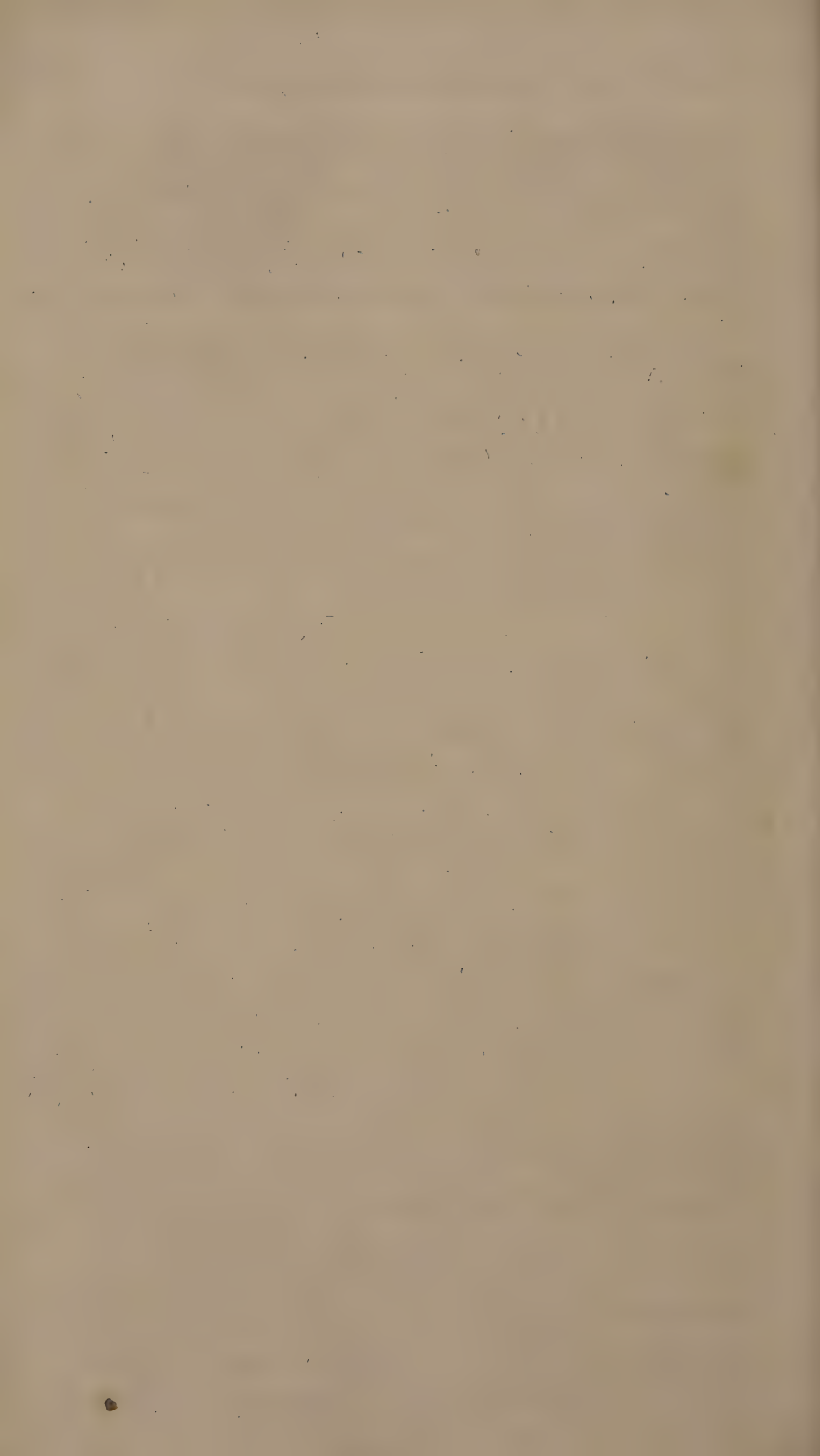
Pulv. Rhei, vel Jalapæ, gr. vj.—xij.
M.

ft. Pulvis aperiens ex melle sumendus.

‡ 1. Take Submuriate of Mercury, three grains.

Powdered Rhubarb, or Jalap,
from six to twelve grains.

Mix them in a little honey.



the occasion may require. These, as inducing no debility, will be far preferable to purgatives, when the disease has made some progress. Purgatives ought indeed carefully to be avoided, except on the first onset of scarlatina; and even then, whatever we employ should be of the mildest nature, lest we should induce diarrhoea, which is apt to occur of itself.

This precaution, with respect to administering purgatives in scarlet fever, but more particularly in that species of it which has been denominated scarlatina anginosa, although sanctioned by the opinion of most of our eminent physicians, and ratified by my own experience, by no means accords with the directions of a modern writer*; for he tells us, that in treating scarlatina he has confided much in the use of purgative medicines, and that no variety of the disease has prevented him from pursuing this practice to the extent he judged necessary. He indeed somewhat qualifies this mode of treatment, by afterwards acknowledging, that he wishes to limit their effects to the express purpose of unloading the bowels, and securing the complete expulsion of their contents, without inducing what he calls full purging.

Bleeding from the system will not be necessary in scarlatina mitis, even although a slight inflammatory diathesis may seem to prevail on its attack. In those cases of scarlatina anginosa where the tonsils are so much inflamed and swelled as to impede deglutition, or considerably interfere with respiration, it will be much safer to apply a few leeches under each ear, and draw blood in this way from the neighbourhood of the parts immediately affected, than from the system by venesection. Where the eyes look red and fiery, and a high degree of delirium prevails in scarlatina, the application of two or three leeches to each temple may be resorted to with safety, and possibly with some relief.

The physicians on the Continent have indeed recommended drawing blood from the arm, or when the head is much affected, from the jugular veins; and it appears that Morton adopted the same practice in many of the cases he attended in London: but I think there will be found very few among *our* modern physicians who would advise it, particularly in scarlatina maligna, even at an early stage of the disease. Dr. Armstrong† is, however, among the few who approve of venesection; and we are told by him that experience in scarlatina has induced him to abandon the stimulant plan of treatment, even in the most malignant forms of the complaint, from having ascertained its inefficacy: and that since he has had recourse to depletory measures of an active and decided kind, he has practised in the disease with much more satisfaction of mind, arising from far greater evidence of success.

Even in scarlatina maligna let the practitioner, he says, give a fair trial to the cold affusions as soon as the stage of excitement

* See Observations on the Utility of Purgative Medicines, by Dr. Hamilton.

† See his Practical Illustrations of the Scarlet Fever, &c.

is developed; and if they should not effectually reduce the fever, let him not pause an instant longer, but open a vein in the arm or neck, or even a branch of the temporal artery, and allow the blood to flow until it is stopped by approaching faintness. If this should not give, he adds, a marked relief to the most prominent symptoms, a second but more moderate venesection should be tried in an hour or two afterwards. The putrid symptoms only occur, he says, in the stage of collapse, and are the products of the preceding stage of excitement. The head must be always raised very high, and after having been shaved, it should be repeatedly covered with folds of linen soaked in cold water. Immediately after the bleeding, the bowels are to be opened by a large dose of submuriate of mercury and jalap, aided by a solution of the sulphate of magnesia, or some other neutral salt, and the purgative plan must be persisted in vigorously until there is a visible change for the better in every respect.

It must however be recollected, he observes, that these powerful proceedings must be solely confined to the stage of excitement, and that unless they are carried into effect within the first thirty hours of that stage, nothing decidedly beneficial is for the most part to be expected from them.

To determine gently to the surface of the body, it may be advisable to give the saline medicine from time to time, blended with small doses of some antimonial*.

Throughout the whole course of the disease, if there is either inflammation or ulceration in the throat, it will be proper to make frequent use of some detergent gargle, as recommended under the heads of Cynanche Tonsillaris and Maligna; which in young children may be thrown into the fauces with a syringe, as they seldom can be prevailed on to gargle.

A little of the linimentum ammoniæ subcarbonatis may at the same time be rubbed twice or thrice a day externally, covering the parts afterwards with flannel. Where the throat is much affected, a mustard poultice may be applied, and kept on as long as it can be borne without producing too great a degree of irritation. When the fauces are in a sloughing or gangrenous state, a warm fomentation of nitric acid largely diluted, together with the stimulating gargle of Cayenne pepper, as mentioned under the head of Cynanche Maligna, will be likely to prove highly serviceable.

Blisters have been employed by some practitioners in those cases where the deglutition is difficult, the head much affected, or a high degree of delirium has arisen; but they have too frequently been

* 2. R. Haust. Salin.
Mistur. Camphoræ, āā f. 5vj.
Antimon. Tartarizat. gr. 1-6th.

Syrup. Cort. Aurant. f. 3j. M.
ft. Haustus 4tis horis sumendus.

* 2. Take Saline Draught,
Camphor Mixture, of each six
drachms.
Tartarized Antimony, sixth of a
grain.
Syrup of Orange Peel, one drachm.
Mix them as a draught, to be taken every
four hours.

observed to prove detrimental, by rather increasing the irritation of the patient. Immersing the feet and legs in warm water might probably be attended with a good effect. When blisters are applied under a tendency to putrefaction, they are apt to become gangrenous. In scarlatina maligna they never therefore should be used.

To obviate inquietude and restlessness, opiates are sometimes resorted to; but where the head is much affected, or there is delirium, they would prove injurious. Æther, and the spiritus ætheris compositus, or Hoffman's liquor, would be more suitable remedies on such occasions.

In those cases of scarlatina which shew a disposition to malignancy or putrescency, it will be advisable to give the bark of cinchona in substance, decoction, or infusion, (as shall be found to sit easiest on the patient's stomach,) along with the mineral acids, (particularly the muriatic,) wine, and other antiseptics, from the first commencement of the disorder.—See Typhus Gravior.

As an antiseptic, carbonic acid gas has sometimes been used in this species of the disease with advantage. The best way of giving it is, by administering the neutralized medicine in such a manner as that the evolution of the gas may wholly take place in the stomach, which is to be done by the patient's taking the potassæ subcarbonas and lemon-juice in separate draughts immediately after each other.

The oxygenated muriatic acid is a remedy which has been much employed of late in scarlatina anginosa, and in many instances with a very beneficial effect, even at an advanced stage of the disease. The proper quantity for persons from fourteen to twenty years of age, will be about one drachm of it in the course of twelve hours, divided into small doses, and given at proper intervals. For younger patients a less quantity will be sufficient. As a vehicle to administer the oxygenant remedy in, we may use common water or a weak infusion of calumba; and to prevent the disoxygenating influence of the light, the medicine should be placed in a dark situation, wrapped in paper. In administering it to the patient, it will be necessary to caution the nurse or other attendant not to employ a spoon, lest a poisonous fluid be thereby conveyed into the stomach, by the oxygen rapidly oxydating the metal of which it is composed. We may also employ the oxygenated muriatic acid in the form of gargle * in scarlatina anginosa.

* 3. R Aq. Hordei, f. ℥vij.
Mellis Rosæ, f. ℥i.
Acidi Muriat. Oxygenat. f. ℥i.

Tinct. Myrrh. f. ℥ss. M.
ft. Gargarisma.

Vel,

4. R Piperis Indici, ʒij.
Aq. Ferventis, f. ℥v. Macera et co-
laturæ adde

* 3. Take Barley Water, seven ounces.
Honey of Roses, one ounce.
Oxygenated Muriatic Acid, one
drachm.

Tincture of Myrrh, half an ounce.
Mix them, and use them as a gargle.

Or,

4. Take Cayenne Pepper, two scruples.
Hot Water, five ounces. Let them
infuse, and to the strained
liquor add

It may not be improper to mention, that camphor is a medicine much employed in scarlatina, and often with a seeming good effect; but more particularly in those cases where the pulse is very low, or the efflorescence disappears suddenly. In these instances ammonia, the aromatic confection, warm bathing, and wine, will likewise be advisable.

A solution of the subcarbonate of ammonia, in the proportion of two drachms to five ounces of water, of which two tea-spoonsful are to be taken every two, three, or four hours, according to the urgency of the symptoms, is another remedy which has been found highly beneficial in this disease*.

My usual plan of proceeding in both scarlatina anginosa and scarlatina maligna is, to give a decoction of the bark of cinchona, with an equal quantity of wine and a few drops of oxygenated muriatic acid, and in two or three hours afterwards the draught † of camphor and ammonia, and so on alternately; which mode of proceeding I have found to be very successful.

If a purging arises in scarlatina anginosa, it ought to be suppressed as soon as possible, by astringents joined with aromatics, opium, and wine.—See Diarrhœa.

The œdematous disposition which ensues after some cases of scarlatina is to be removed by diuretics, joined with tonics and a generous diet, as advised under the head of Anasarca, giving at the same time some gentle laxative occasionally. By the generality of practitioners this œdema has been considered as a disease of atony, but we are told by the author of a small tract ‡, that his experience has proved it a true arterial dropsy, (as he terms it); and he says that bleeding will often cure it without any assistance from medicine, but that purging is the safest and readiest means of relief, and not bark and aromatics, hitherto generally prescribed in such cases.

In most cases of scarlatina, when the fever has subsided, the cinchona, stomachic bitters, chalybeates, the mineral acids, wine,

* See Dr. Peart's Treatise on the Malignant Scarlet Fever and Sore Throat.

† See Dr. G. Gregory's Lecture on Dropsy.

Decoct. Cinchon. f. ℥iij.
 Acid. Muriat. Oxygenat. f. ℥i. M.
 ft. Gargarisma.
 † 5. R Camphoræ, gr. v. Solve in
 Alcoholis, f. 3ss. et adde
 Aq. Puræ,
 — Cinnam. aa f. 3v.
 Ammonizæ Subcarbonat. gr. x.
 Syrup. Cort. Aurant. f. 3j.
 ft. Haustus, 4tis horis capiendus.

Decoction of Peruvian Bark, three ounces.
 Oxygenated Muriatic Acid, one drachm.
 Mix them for a gargle.
 † 5. Take Camphor, five grains. Dissolve it in
 Alcohol, half a drachm; then add
 Pure Water,
 Cinnamon Water, of each five drachms.
 Subcarbonate of Ammonia, ten grains.
 Syrup of Orange Peel, one drachm.
 Mix them, and let this draught be taken every four hours.

Belladonna as a preventive of *Scarlatina* has been extensively used by the German Physicians and with the most decided success, Two grains of recently prepared extract of *belladonna* dissolved in an oz. of common-water of which 2 or 3 drops are to be given to Children of a 12 Mth old more 9 & Evening.

The principle on which it is given is that of curing diseases by producing symptoms similar to the disease itself, a mode of treatment introduced by D^r Hahnemann.

a nourishing diet, pure air, and gentle exercise, will greatly accelerate the recovery of the patient.

Scarlatina being of a very contagious nature, and never failing to excite the greatest consternation and anxiety when it breaks out in schools and families, it seems right to notice the means which have been recommended*, under such circumstances, for checking its progress, and attempting its total extinction.

So long ago as 1779, Dr. Haygarth† preserved 37 boys from the scarlet fever in a boarding-school at Chester, by confining a patient ill of it to a violent degree, in a separate room of the same house, and by attention to perfect cleanliness. In a boarding-school at Bath, in 1805, two young ladies had a scarlet fever and a malignant ulcerated sore-throat, one of them dangerously. The governess visited the patients, and assisted to syringe their throats frequently in the day. After washing her hands, and with other strict attention to perfect cleanliness, so as carefully to avoid conveying any contagious dirt out of the sick chamber, but without changing her garments, she went among 65 of her scholars in the adjoining rooms of the house to hear their lessons and examine their work: not one of these young ladies was infected with the fever, as Dr. Haygarth was informed by the physician who attended these patients. The testimony of such numerous facts proves, beyond all controversy, that contagious miasms, in his opinion, do not adhere to clothes so as to infect others closely exposed to them. Hence typhus, scarlatina, &c., are always caught either by miasms issuing from the patient, or by miasms issuing from the contagious poison in a solid or liquid form discharged from the patient; but not by miasms adhering to clothes, &c. It completely confirms the fourth law of contagion mentioned under the head of Typhus, which is of very great importance, being highly conducive to the simplicity, facility, and certainty of the rules of prevention. If, in future, a patient ill of either typhus or the scarlet fever, be permitted to infect the family, where there is a room in the house for the separation of the sick, it will be justly imputed to the want of knowledge or the want of care in the attendants.

All masters and mistresses of boarding-schools ought for their own sakes, as well as for the interest of the children committed to their care, to be provided with one or more separate apartments, in proportion to the size of the establishment, for the reception of invalids. These should be so contrived that the communication between the rooms appropriated for the sick and the rest of the house may be speedily and completely cut off at any time. If the establishment be too small to admit of such appendages under the same roof, a proper lodging should be reserved in the neighbourhood, to be always in readiness, whenever the occasion might require to resort to it.

* See Dr. Blackburne's *Observations on Scarlet Fever*.

† See Dr. Haygarth's *Sketch of a Plan to exterminate the Small-Pox*, p. 247.

As soon as the fever manifests itself in one subject, the person so affected should be separated without delay from all the rest. The next essential step to be taken is to subdue unnecessary alarm and consternation; in the performance of which duty the parent or guardian must co-operate fully with the instructor. Where the scholars are numerous, and the extent and disposition of the premises admit of it, the best plan is not to disperse the school; for by dismissing the children, those in whom the infection is latent, and to be afterwards produced, thereby convey it to their respective families, and so promote the further propagation of the disease, to the great injury of the junior branches in particular, who are more susceptible of the contagion than adults. Having ascertained and cut off the source of infection; having separated the originally tainted as soon as they begin to sicken, and while they yet remain incapable of imparting disease; having disposed of them in proper apartments, and strictly enforced the rules of prevention; the evil may be crushed in its infancy. The extent and magnitude of the mischief will thus be accurately measured, and totally obviated.

But if the accommodations of the establishment be too limited for the complete execution of this scheme, or parents be unwilling to commit their offspring to any other than their own inspection in the time of illness, it is a sacred duty imposed on them not to admit even a suspected child, much less a diseased one, into family intercourse with themselves, their other children, or their servants. A separate apartment, where circumstances allow of such a convenience, ought to be in readiness, or in a state to be made ready, for accidental sickness; and this should be at the top of the house, or upper story, as the current of heated air is naturally upwards, and the atmosphere loaded with contagious steams emanating from the body, will, if the patient be in a lower apartment, diffuse themselves over the whole house, whereas, if he be placed above, they will have a ready vent. Here a strict quarantine should be performed, whether the subject be suspected or convalescent, the period of which may be regulated, partly by what is already known on the subject, and finally determined by future observation and the result of aggregated facts. If the child be really infected, immediate separation, with a suitable regimen, should be adopted.

To annihilate the powers of contagion, we may employ fumigations with manganese, salt, and sulphuric acid, as advised under the head of Dysentery: or we may have recourse to those of the muriatic or nitric acid, as noticed under that of Typhus Gravior.

In regard to prevention, it is obvious that an improvement of the diet in such as live low, moderate exercise in the open air, cold bathing, and in short every mode of strengthening the constitution, with great attention to cleanliness and ventilation, must have a tendency to ward off the disease. Those who are in attendance ought as much as possible to avoid inhaling the breath of the sick, as it is clear that scarlatina, as well as some other diseases,

may be so received. By using a gargle of capsicum frequently, as noticed under the head of *Cynanche Maligna*, they probably may be enabled to resist contagion the better.

PESTIS, OR THE PLAGUE.

THE plague is a very malignant fever of a putrid and contagious nature, in the progress of which extreme debility, buboes, carbuncles, petechiæ, hæmorrhages, colliquative diarrhœa, and such other symptoms arise. The contagion of the plague is of a specific nature, giving rise to febrile symptoms, and particularly affecting the nervous and glandular system.

Sir James M'Gregor, in his *Medical Sketches of the Expedition from India to Egypt*, notices, that the plague is subject to considerable varieties in different seasons and circumstances. In the Indian Army, he observed, that when the disease first broke out, the cases sent from the crowded hospitals of the 61st and 88th regiments were, from the commencement, attended with typhoid or low symptoms. Those which were sent from the Bengal volunteer battalion and from the other corps, when the army was encamped near the marshy ground at El-Hammed, were all of the intermittent and remittent type. The cases which occurred in the cold rainy months of December and January, had much of the inflammatory diathesis: and in the end of the season, at Cairo, Ghiza, Boulac, and on crossing the Isthmus of Suez, the disease wore the form of a mild continued fever.

The appearances of the plague have been arranged by different authors in different ways. The French writers on the subject have specified five varieties; Dr. Russel has extended them to six: but the arrangement of Sir Brooke Faulkner*, drawn from extensive observation during the late appearance of that complaint in the island of Malta, which admits only of three species, appears to be the most judicious; and this I shall therefore adopt. The propriety of distinguishing the plague into three species is also sanctioned by a small tract from the pen of Dr. Pearson†.

The plague is by most writers considered as the consequence of pestilential contagion, which is propagated from one person to another by association, or by coming near infected materials.

Some, however, have doubted whether the disease is really contagious or not, whilst a few‡ have asserted positively that it is not so: an absurd doctrine truly, which, if acted upon by the Legislature, would be likely to be attended with the most injurious consequences. The fact that it is evidently contagious is fully established in Sir James M'Gregor's opinion; but the laws of its

* See his *Essay on the Plague*, inserted in the *Edinburgh Medical and Physical Journal*, vol. x.

† See his *Brief Description of the Plague*.

‡ See Dr. M'Lean's *Researches in the Levant concerning the Plague*.

transmission are not more accurately known than the specific nature of the contagion. Dead bodies, we are told, did not seem to convey it; the heated animal body, and still more with a febrile moisture on the skin, appeared to transmit it most readily. Among the most obvious causes which contribute to induce the plague besides contagion, may be enumerated the following, viz. corrupt or damaged grain, putrid fish or other animal substances, noxious exhalations arising from stagnant waters or slimy mud, a residence in confined situations where the current of air is obstructed, and the want of due cleanliness.

The disease attacks persons of all ages and both sexes indiscriminately; but women, young people, and infants at the breast, have been observed in general to resist infection more than robust men. Those who were exposed to vicissitudes of heat and cold, such as bakers, cooks, and smiths, were noticed, during the campaign in Egypt, to be more particularly attacked with it.

In all epidemic plagues, terror and anxiety, filth and defective nutriment, fatigue and hurry, anger and intemperance of every description, have acted as predisposing and accelerating causes of the distemper.

In some Eastern countries the plague is wholly unknown, but more particularly in Persia and Japan. The Egyptians denominate the winter and early part of the spring their season of the plague, which they acknowledge never passes without this disease appearing in some degree. It has also been remarked that the rise, progress and abatement of this disease in different years, bears a striking resemblance to each other. At its first appearance, which is usually in November, it assumes its most deadly form, and those affected by it sink into the grave almost without complaint. During the winter and beginning of spring, it scarcely manifests any diminution of its virulence, but towards the end of the latter, when the weather increases in warmth as the summer approaches, its attacks become less frequent, and its malignant symptoms subside into the appearances of ordinary disease, still however retaining the characteristic one of glandular affection. Towards the end of June, it is said to disappear*.

The plague is known to be most prevalent in Egypt soon after the inundation of the Nile, or rather its recession; for a quantity of slimy mud being deposited on the banks of the river and other places it has overflowed, occasions humid mephitic exhalations to arise, and which are supposed to produce the disease. From Sir Robert Wilson's account of the diseases of Egypt†, there is great reason to suppose that a humid state of the atmosphere is favourable to the production of the plague; for the English and Turkish armies which marched to Cairo escaped contagion, notwith-

* See Mr. Webbe's Narrative of Facts relative to the Plague, in vol. vi. p. 118, of the Transactions of the London College of Physicians.

† See his History of the Expedition to Egypt.

standing almost every village was infected ; while the troops that remained stationary on the moist shore of Aboukir were severely affected, and lost many men. A dry atmosphere appeared to him not only to be a preventive of the plague in some degree, but likewise to act as a remedy ; for we are told that several men confined with this disorder in the hospital at Jaffa, escaped into the Desert, and endeavoured to reach the army ; but finding the attempt impracticable, they returned in three days perfectly recovered.

Baron Larrey* observes that the plague puts on a more formidable appearance during the continuance of the south winds than during the winds from the north or north-east. When the latter prevailed, its effects were diminished ; and if it continued for any time, the disease disappeared altogether. On the return of the south winds, (or khamsyn) it appeared again with as much violence as ever. A curious observation made by this gentleman was, that the plague rarely attacks wounded men whose wounds were in a state of plentiful suppuration ; but as soon as the wounds were skinned over, a great many were seized, and few escaped death. He observed the same thing among the inhabitants of the country who had issues open. Galen, and many other celebrated writers, have also noticed, that in countries which they have seen ravaged by the plague, it had spared all those who had issues plentifully discharging.

It has been observed that the plague generally appears as early as the fourth or fifth day after infection ; but it has not yet been ascertained how long a person who has laboured under the disease is capable of infecting others ; nor how long the contagion may lurk in an unfavourable habit without producing the disease, and may yet be communicated, and the disease excited, in habits more susceptible of the infection. It has generally been supposed, however, that a quarantine of forty days is longer than is necessary for persons, and probably for goods also. Experience has not yet determined how much of this term may be abated. If I mistake not, the Board of Trade has, however, under the sanction of the College of Physicians, somewhat abridged it.

To repeal or abrogate the quarantine laws wholly because a few misguided men have asserted that the plague is not contagious, would be likely to bring down devastation on this nation, by exposing it to the visitation of a malady the most destructive of any to human life.

In the first species of the plague, according to the arrangement of Sir Brooke Faulkner, the energy of the brain and nervous system is greatly impaired, indicated by coma, slow, drawling, or interrupted utterance ; the tongue is white, but little loaded with sordes, and usually clean, more or less, towards the centre and extremity ; the anxiety is great, countenance pale, stomach extremely

* See his Memoirs of Military Surgery.

irritable, and the strength much impaired. Rigors and pain in the lower part of the back are among the early precursors of the other symptoms. This was observed by Sir Brooke Faulkner and the other physicians at Malta to be the most fatal species of the plague, and prevailed chiefly at the commencement of the late disaster. Those who were infected sometimes died in the course of a few hours, and with petechiæ.

In the second species, the state of the brain is the reverse of what takes place in the former, the symptoms generally denoting a high degree of excitement; the pain in the head is intense, thirst frequently considerable, though sometimes wanting, countenance flushed, and utterance hurried. The attack is ushered in by pain in the back, and rigors, as in the first species. Epistaxis not unfrequently occurs in this. Glandular swellings come out tardily, and after appearing, recede again without any remission of the general symptoms. Carbuncles arise over different parts of the body or extremities, which are rapidly disposed to become gangrenous. The delirium continues extremely high and uninterrupted, and the patient perishes in the course of two or three days. Sometimes he lingers on till the seventh, yet rarely beyond this period without some signs of amendment. Sir Brooke Faulkner found the instances of this second species very numerous, and they were nearly as fatal as the preceding. In the countenances of some of the sick, just previous to the accession of the more violent symptoms, there is an appearance of despair and horror which baffles all description, and can never well be mistaken by those who have once seen it.

The third species is somewhat akin to the last, only the symptoms are much milder, and the brain comparatively is little affected. The buboes and other tumours which make their appearance, go on more rapidly and kindly to suppuration; and by a prompt and early employment of remedies to assist the salutary operations of nature, the patient has a tolerable chance of surviving. Cases of this kind are often so mild, that persons have been known to walk about in seeming good health, and without any evident inconvenience from the buboes.

Such are the characteristic symptoms of this malignant disease, the varieties of which seem to depend in a great measure on the constitution or state of the air at the period of the epidemic prevailing, and on the habit of body of the patient at the time of the attack.

In no disease do patients bear motion worse than in this. The least motion has been known to induce syncope, and even death, particularly in the last stage of the complaint.

The plague is always to be considered as attended with imminent danger; and when it prevailed in this country about two hundred years ago, proved fatal to most of those who were attacked with it. It is probable, however, that many of them died from want of care and proper nourishment, the infected being

forsaken by their nearest friends; because in Turkey and other countries where attention is paid to the sick, a great many recover. Of the French army that invaded Egypt, little more, however, than one third of all that were attacked with the plague recovered; as appears by the report made by Dr. Desgenettes*, who was chief physician to that army.

The duration of the disease is various. In some instances the effect of the pestilential contagion is the immediate extinction of life; and cases have occurred wherein the patient has survived but a few hours the first sensation of illness. In other instances again, he has lived till the thirteenth, and even the seventeenth day of the disease.

Where the plague is ushered in by fever and delirium, it is seldom that the patient recovers: in spite of every endeavour, he is generally deprived of life within forty-eight hours, or on the third day at furthest. If the fever does not occur until the second day from the attack of the disease, there is less danger, as time is thereby given to obviate the consequent symptoms.

When the plague is unattended by buboes, it runs its course more rapidly, and is more generally fatal, than when accompanied by such inflammations. The earlier they appear, the milder usually is the disease. When they proceed kindly to suppuration, they usually prove critical, and ensure the patient's recovery. Sudden death has, however, been known to happen even when the violence of the constitutional disturbance appeared to have been subdued, when buboes have made their appearance, were suppurating, and the patient considered convalescent. It is generally a favourable sign when the bubo does not adhere, but shakes on its base. A gentle diaphoresis, arising spontaneously, has been known in many instances to prove critical. When carbuncles shew a disposition to become gangrenous, the event will be fatal. Furuncles, petechiæ, hæmorrhages, severe vomiting, and a colliquative diarrhœa, denote the same termination.

The worst forms of the disease are always accompanied with the usual symptoms of putridity and malignity; and such rarely terminate favourably. It has been remarked, that if a patient, after an access of delirium, was suddenly restored to his senses, he seldom recovered. Most cases terminate fatally wherein the patient is comatose from the beginning. The typho-mania may be regarded as a more fatal form of delirium than the inflammatory.

Dissections of the bodies of those who have died of the plague have discovered the omentum, stomach, and intestines gangrenous in some places; the liver in a state of congestion and considerably enlarged, the gall bladder filled with black fetid bile, and the

* See his *Histoire Médicale de l'Armée de l'Orient*.

pericardium with a bloody fluid*. Proofs of inflammation and gangrene have also been found in the brain and its investing membranes, in the lungs, and kidneys. In many instances the glandular system has been found in a very diseased state, and the blood black and loose in its texture, similar to what occurs in putrid fever.

Under the supposition that a person has been exposed to the contagion of the plague, and in consequence of this becomes much indisposed, the first step to be adopted is to give him an emetic, particularly where nausea or vomiting ensues. If a severe retching should prevail after the operation of the emetic, this may possibly be relieved by administering the saline medicine in the act of effervescence; but if it should not, we may make an addition of a few drops of tinctura opii to each dose.

To obviate costiveness, and draw off any putrescent matter which may be lodged in the bowels, it will be necessary to make use of some gentle laxative: but large evacuations, by the aid of strong purgatives, would be very improper. In an advanced stage of the disorder, emollient clysters would be most advisable, as being less apt to excite diarrhœa, which, when it arises towards the close, generally destroys the patient. So careful are the Eastern nations in avoiding this occurrence, that they most commonly make use of suppositories only.

When a diarrhœa does occur, either spontaneously or from an improper use of cathartics, it should be suppressed as quickly as possible by astringents, opiates, and every other means we can employ.

We are informed by Dr. Russell, that many, particularly the Asiatics, make it a rule to let blood in all cases of the plague, if they see the patient at an early period; and some recommend it as late as the fourth, fifth, sixth, or seventh day; and even some European practitioners have gone nearly as far. To him it appeared that very plentiful bleeding at the first appearance of the disease was of great service.

Dr. Buchan was in the habit of occasionally resorting to bleeding, we are told by Sir James M'Gregor, and that during the first season he had met with several cases where the operation proved of the greatest service. The Turks, we are informed, employ local instead of general blood-letting, most commonly; and in the latter they draw off only a very small quantity.

Sydenham considered the plague as an inflammatory affection, and speaks of the efficacy of bleeding in the warmest terms; and Dr. Mead† not only advises venesection, but declares that we must draw blood with a more liberal hand than in other cases, if we are to expect success from it in this complaint. In opposition

* See Memoirs of Military Surgery, by Baron Larrey, abridged from the French by J. Waller.

† See his Works.

to the opinion entertained by most modern physicians, who have considered the plague as an affection of direct and excessive debility, a late writer* asserts, on the contrary, that it is one of excitement and congestion, and of course he advocates the necessity of employing the lancet in its treatment.

The advantages of blood-letting in this disease appear to be of a very dubious nature; for we are given to understand that Dr. Whyte, one of the Physicians to the Forces in Egypt, used the lancet very freely, but that every one of his patients died. In the first stage of the disease, where there exists congestion or turgescence in any part of the body, the application of cupping-glasses, with previous scarification, may probably be a safer remedy than venesection.

It has been observed that a gentle diaphoresis sometimes proves critical, and carries off the disease, but more particularly when it arises spontaneously. To assist nature in throwing off the morbid matter by the pores, if possible, it will be right to employ diaphoretics, such as the neutral salts, small doses of antimonials, or the pulv. ipecac. compos. as advised under the head of Simple Fever; the effects of which may be increased, by directing the patient to drink plentifully of diluent acidulated liquors; and where the heat of the body is not very considerable, his strength may be supported under this operation by means of a little wine. Profuse sweating is, however, by all means to be avoided, as by inducing debility it would prove injurious.

Dr. Falconer of Bath, in his Essay on the Plague, seems to insinuate, that no small share of the mortality formerly observed in this disease may be attributed to the sweating regimen, then commonly employed for its cure. Instead of adopting this plan, he advises the avoidance of a warm bed, and indeed of a bed altogether, if possible, in the day time; a circulation of free and cool air, light clothing, cool drinks, and particularly cold water; and he mentions, that if any benefit is to be expected from the use of this regimen, it must be tried largely and steadily; not as if cold liquor were an indulgence permitted or allowed, but as a remedy enjoined, on which the principal dependence was to be placed. In addition to these means Dr. Falconer recommends the external use of cold water in the manner pointed out by the late Dr. Currie of Liverpool, and noticed under the head of Typhus Gravior.

Savary, in his Letters on Egypt, mentions an anecdote which is considered by Dr. Falconer as much to his purpose. The captain of a ship, whose sailors had contracted the plague at Constantinople, caught it himself by attending on them: he felt, as he expressed himself, excessive heat, which made his blood boil; the disease seized his head, and he perceived (as he thought) that he had only a few moments to live. The little remaining reason he had, taught him to attempt an experiment: he laid himself down

* See Illustrations of Typhus and other Febrile Diseases, by J. Armstrong, M.D.

quite naked on the deck: the heavy dews that fell, penetrated, according to his sensations, to his very bones. In a few hours he could breathe better; his agitated blood became calm, and bathing the morning after in the sea, he was perfectly cured.

This case brings to my recollection another, of a French soldier, and reported by Dr. Desgenettes, who being afflicted with the plague threw himself into the Nile, under a high degree of delirium, and on being taken out of the water after a short lapse of time, soon recovered from the disease, seemingly in consequence of his immersion. A similar case is brought forward of the good effects derivable from the sudden application of cold water by Sir Brooke Faulkner, in his *Observations on the Plague**.

Spunging the body with vinegar or citric acid has been found a useful remedy.

Camphor is a medicine which has been much recommended in the plague.

For the purpose of allaying irritation and procuring sleep, opiates are advisable, and, when used, have by no means been found to produce coma. They seem equally proper as in typhus.

If we are so fortunate as to procure a crisis by the remedies which have been advised, the bark of cinchona should be given in as large doses as the stomach will bear, and be repeated every two hours; but if there is no chance of obtaining this desirable end, then, besides this bark, we should adopt the other means recommended under the head of Malignant Fever, with the view of obviating extreme debility and the disposition to putrescency.

A free use of both vegetable and mineral acids seems advisable in the plague as well as in typhus gravior. Acidulated drinks will be highly proper. Sir James M'Gregor, in his tract before mentioned, indeed hints that he found the nitric acid and other irregular remedies to be serviceable. He likewise employed mercury with, as he thought, some advantage; and when the mouth was speedily made sore by it, recoveries oftener took place in the same manner as in yellow fever, than when the system proved unsusceptible of mercurial action.

It appears from this gentleman's report, that some patients were kept under the influence of wine and opium for a time, according to the Brunonian theory, but that the practice never proved successful.

Where the patient survives the disease, the treatment of the carbuncles or buboes becomes the province of surgery. Their development at an early period ought to be assisted by stimulants and rubefacients.

OF THE MODE OF PREVENTION.

It is well known that the pestilential virus which emanates from the human body may adhere for a long time to other substances,

* See Edinburgh Med. and Surg. Journal for April 1814, p. 151.

and preserve its power of producing and propagating future infection; and that in this manner it may be conveyed from the Eastern countries into any other; the persons first attacked by being exposed to the contagion then becoming the source of infection to others.

This fact being well established, it has been judged proper by the legislature of this kingdom and of some others, to oblige ships, persons, and all kinds of merchandise coming from places apt to be infected with the plague, to procure bills of health, or to undergo a certain quarantine, during which period the goods are, or ought to be, properly ventilated. An adherence to these regulations has of late years prevented the importation of the disease; but should it unfortunately ever be introduced, the following steps must be pursued for destroying the infection, and preventing its further propagation.

1st, The infected should be confined in lazarettos, surrounded by strict guards, and no kind of communication be held with them, except by such attendants as may be absolutely necessary.

2dly, The nurses or others employed in attending the sick, must take care to come in actual contact with them as seldom as possible, or place themselves in such a situation as that a stream of air may carry the effluvia towards them*. They should likewise pay an unrelaxing attention to personal cleanliness. Dresses of oiled silk have been strongly recommended by Sir Brooke Faulkner, as an invaluable armour to such persons as are constantly obliged to be about the sick†. One of these he wore himself, as did also the attendants in the military plague hospital at Malta, during the extensive prevalence of the disease, in the year 1813, in that island. Medical attendants will act prudently in changing their linen and clothes, and in well washing their whole body, but more particularly their hands, with warm water and vinegar, as soon as they quit the lazaretto.

3dly, All substances capable of being impregnated with the

* It is a fact well known, that the pestilential poison, unlike other ordinary epidemics, is confined to the vicinity of the affected body, and becomes so dilute at the distance of a very few paces, as to be incapable of further action. Mons. Samoilowitz, a celebrated Russian physician, and author of a very good Memoir on the Plague, insists that this disease exists neither in the air, nor is communicated by the air, but by contact alone: and Mons. Sonnini tells us, that it is sufficient for Europeans settled in Turkey to shut themselves up in their houses in order to be preserved from the contagion, even when it makes the greatest ravages in towns which they inhabit, and although they draw from without their provisions and daily food.

The report made by Sir James M'Gregor likewise shews how very limited in extent is the action of contagion in the plague. Thirteen of the medical gentlemen of the army of Egypt were directly in the way of contagion, for it was their duty to come into contact with the infected; of these, seven caught the infection, and four died. To the atmosphere of the disease all the medical men of the army were exposed, as they saw and examined the cases in the first instance; but, except from actual contact, there never appeared to be any danger of contagion.

Although the disease is communicated chiefly by contact, yet it appears to me that authors go too far when they infer that it is not communicable by an atmosphere strongly tainted with pestilential miasma.

† See *Edinburgh Journal* for April 1814.

effluvia, or of vitiating the atmosphere, ought to be removed from the apartments of the sick to situations where the healthy cannot suffer by them, and where they may undergo a proper purification, by exposing them to a heat of about 120 of Fahrenheit and then freely ventilating them. The linen and other clothes of the patient should be burnt. The dead should be immediately interred: probably combustion would be preferable to inhumation.

4thly, The atmosphere surrounding the infected ought to be kept as pure as possible, so that neither the patient nor his attendants may suffer from the exhalations: with which view, the strictest attention should be paid to cleanliness, a free ventilation, and fumigating with the nitric or muriatic acid, as advised under the head of Malignant Fever. A long stay in pestilential apartments that are but little aired, ought carefully to be avoided, as also the exhalations from the dead bodies, or from patients in the last stage of the disease.

5thly, To avoid whatever weakens the body, by giving way to intemperance or sensuality, or by making use of a poor diet, great fatigue, or considerable evacuation.

6thly, To keep the mind cheerful, and as free from care, anxiety, fear, and lowness of spirits, as possible.

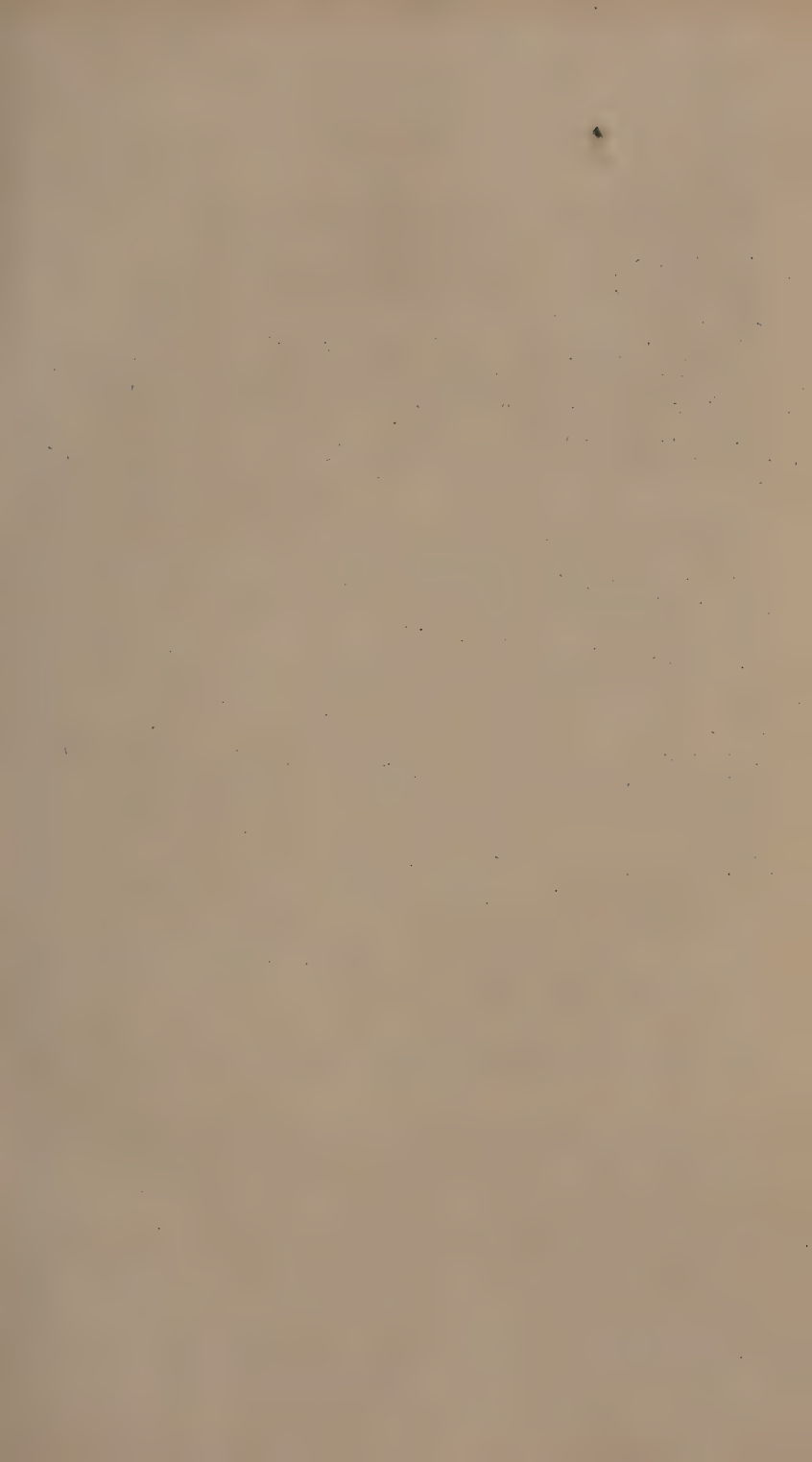
7thly, As it is supposed that by strengthening the bodies of men we can thereby enable them to resist contagion the better, some advantages may probably be derived from using cold bathing, with wine, bark, and other tonic medicines, with a generous diet. Where access to the sea cannot be had, and water is scarce, the substitute proposed by a late writer* is, that a shirt be dipped every morning in a saturated solution of common salt in cold water, and after being well rung out, to be put on wet and cold, keeping the body in motion for some time afterwards by moderate exercise.

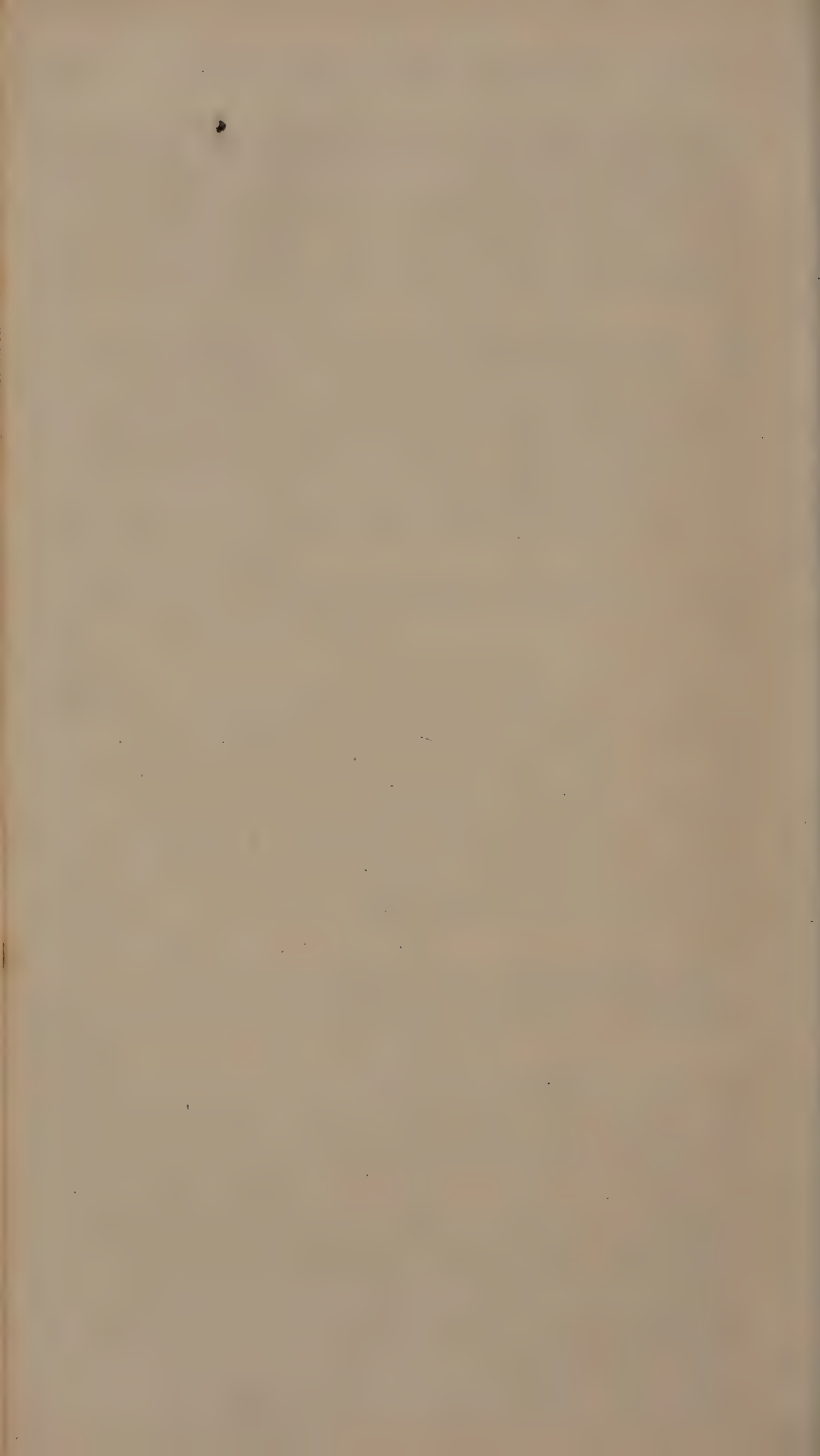
Those who cannot keep themselves isolated from the contagion, will act prudently, in conformity to the observations of Baron Larrey and other writers, in opening a large issue, or perpetual blister.

In Dr. Duncan's Annals of Medicine for 1797, is inserted an article relating to the cure and prevention of the plague by frictions of the whole surface of the body with olive-oil, and communicated, as we are given to understand, by George Baldwin, Esq., at that period his Britannic Majesty's agent and consul-general in Egypt.

It is mentioned, that there is no instance of a person rubbing a patient having taken the infection; but, by way of precaution, it is advised to anoint himself all over with oil, and to avoid receiving the breath of the infected person into his mouth and nostrils. The prevention to be used in all circumstances, is that of care-

* See Description of the Plague, &c. by Richard Pearson, M.D.





fully anointing the body, and living upon light and easily digestible food.

A striking observation made by Mr. Baldwin is, that among upwards of a million of inhabitants carried off by the plague in Upper and Lower Egypt, during the space of four years, he could not learn that a single oilman, or dealer in oil, had suffered*.

Mr. Jackson, in his *Reflections on the Commerce of the Mediterranean*, likewise informs us, that in the kingdom of Tunis, where the plague frequently rages in the most frightful manner, destroying some thousands of the inhabitants, there never was known an instance of any of the coolies, or porters, who work in the oil-stores, being in the least affected by this disorder, their bodies being always well smeared with the oil, as well as their clothes being imbued with it.

It has been considered as pretty certain that in the generality of instances the contagion of the plague enters the body through the medium of the cutaneous lymphatics, and thence produces the disorder of the lymphatic glands. This idea is illustrated by the probability that the external use of oily frictions lessens the susceptibility to infection; and Sir James M'Gregor† mentions a fact which much favours the opinion, by observing, that the men who were employed in applying oily friction to the camels for some epidemy affecting them, escaped the plague.

The evidence produced in behalf of the plan communicated by Mr. Baldwin, seems more satisfactory as to the preventive powers of the application, than as to its sanative properties after the disease has once taken place. It seems, however, right to notice, that Dr. Assalini, who was a medical officer in the French army which invaded Egypt, makes favourable mention of oily frictions in his *Observations on the Plague*, as being generally followed by copious sweating; and to this he thinks their beneficial operation is to be attributed. We are also told by Mr. Jackson‡, that he recommended the remedy to several Jews and Mussulmans during the time that the plague was depopulating West Barbary, in 1799 and 1800; and no instance of its failure, when duly persevered in, even after infection had manifested itself, had come to his knowledge.

Inoculation for the plague has been tried by some physicians, in order to discover if this malady could not be checked or rendered less virulent thereby; and it appears from Sir Robert Wilson's *History of the Expedition to Egypt*, that Dr. Whyte, resolving to become the patient of his own speculation, during the time this disease raged at Rosetta, inoculated himself with matter taken from the buboes of an infected person. The attempt failed twice;

* It has been said, that when the plague raged in London, about two hundred years ago, the dealers in pitch, tar, and tobacco, were particularly observed to escape the contagion

† See his *Medical Sketches*.

‡ See his *Account of the Empire of Morocco*.

the third proved fatal in three days after the symptoms shewed themselves.

It likewise appears that Dr. Desgenettes, in order to lessen the general alarm, and to inspire confidence among the French troops, inoculated himself both in the groin and arm-pit, with a lancet dipped in the pus of a bubo in a convalescent patient. The inoculation, however, failed; and the only consequence was a slight inflammation on the inoculated parts, which continued for more than three weeks.

As the future susceptibility to the disease is by no means, however, destroyed—for the same person may be afflicted with it repeatedly, and even may be attacked twice in the same season with it, as Dr. Desgenettes experienced, (many of the convalescents from the plague, who were appointed to take care of the sick, having been, he observes, seized a second time,)—this experiment would not be advisable, unless it could be ascertained that the disorder is rendered milder by the inoculation. This is a point not yet, however, established: indeed, the information afforded us by Mons. Sonnini * seems to lead to a contrary conclusion; for he mentions, that a Russian surgeon, who was a prisoner at Constantinople, with a number of his countrymen, took it into his head to inoculate these unfortunate men with the plague, under the supposition of rendering the contagion less destructive; but by doing so he killed two hundred of these prisoners: and fortunately for the rest, the inoculator, after having performed the operation on himself, soon died of his own treatment.

By a paper read before the Royal Society of London, on the 27th of June, 1816, it appears, from comparative experiments on the disinfecting powers of vinegar, chlorine, and the fumes of sulphur, that the best and most efficacious method of disinfecting letters coming from places supposed to be visited by the plague, is to expose them to the fumes of burning sulphur, mixed with nitrate of potass.

MILIARIS, OR MILIARY FEVER.

THIS fever takes its name from the small pustules or bladders which appear on the skin, resembling in shape and size the seeds of millet, being in general numerous on the breast, back, and other parts where there is most moisture on the skin. It may be distinguished from the other exanthemata by its pathognomic symptoms, the peculiar sour and rank odour of the sweat, attended with dejection of spirits, oppression, and sense of constriction about the precordia, anxiety, and frequent sighing.

Many of our modern physicians seem to think that the disease is never a primary one, but arises in consequence of some other;

* Travels into Greece and Turkey, p. 497.

particularly where much sweating has been excited, either by keeping the patient too warm, or by giving heating medicines.

All debilitating powers, such as a lax habit of body, weakness, however induced, excessive evacuations, the presence of irritating matter in the *primæ viæ*, the period of child-birth, long-continued menstruation, &c., may be regarded, most probably, as predisposing causes, while the hot regimen is to be looked upon as the principal exciting cause of the eruption. This conclusion seems justifiable, as it is found, that whatever the state of the patient may be, miliary eruption is very generally avoided by exposure to cool air, and administering cold liquors.

It has been observed to affect both sexes, and persons of all ages and constitutions, but that females of a delicate habit are most liable to it, particularly in child-bed. It is, however, by no means a contagious disease, and has rarely, if ever, been known to prevail epidemically.

Moist variable weather predisposes most to this eruption, and its occurrences are more usual in the spring and autumn than in the other seasons. Winter is the least favourable to its appearance.

Miliary fever makes its attack with a slight shivering, succeeded by heat, restlessness, loss of strength, depression of spirits, anxiety, sighing, difficulty of breathing, oppression at the chest, and a low quick pulse. The tongue appears white, the mouth is dry, the body costive, and when the disease is violent, coma or delirium is apt to arise. Great dejection of spirits and anxiety, with fetid sweats, are, however, the most common forerunners of the miliary eruption.

The patient after a short time feels an itching or pricking pain under the skin, soon after which innumerable small pustules, of a red colour, and of the size of millet seeds, come out first upon the neck and breast, thence gradually extending to the trunk and extremities; their prominence is imperceptible to the sight, yet evident to the touch; they often lose their redness, and appear of the ordinary colour of the skin. They are usually distinct, but now and then we may perceive them clustered together.

About the second day after the appearance of the eruptions a small vesicle may be observed on the top of each pimple, and in two or three days more, they break, and are succeeded by small crusts, which fall off in scales. Sometimes it happens, that when one crop of eruptions has disappeared, another will succeed it.

On the eruption being visible, most of the foregoing symptoms are usually relieved. The sweating is apt, however, to continue, unless proper means are used to check it, and to be attended for many days with a fresh crop of eruptions.

The eruption being steady, and not disappearing after having come out; the fever inclining more to the nature of synocha than typhus; and there being a considerable remission of the symptoms upon the appearance of the eruption, denote a favourable issue; whereas great anxiety, dejection of mind, vast prostration of

strength, difficulty of breathing, flaccidity of the parts covered by the eruption, its sudden disappearance, a rapid, weak, and intermitting pulse, violent vomiting, profound coma, delirium, convulsions, petechiæ and other symptoms of putrescency, are to be considered as prognosticating a fatal termination to the disease.

The appearances to be observed on dissection will depend on the nature of the fever which accompanies the eruption, and which most usually is of the typhoid kind.

As the disease is evidently brought on by the application of too much heat, an early attention ought to be paid to the means of preventing it from appearing in those affections which it is apt to accompany. With this intent, the patient should not be covered with too many bed-clothes; neither should the chamber be kept hot by means of too much fire, or by being closely shut up; on the contrary, a sufficient ventilation ought to be allowed, so as to keep it of a proper temperature. In doing this, we are, however, to take care not to run into the opposite extreme, and allow too free an admission of cold air.

Sweats which are not followed by an abatement of the febrile symptoms, cannot of course prove critical, and may therefore be safely and advantageously checked, by keeping the patient's apartment cool, by covering him lightly and loosely with bedclothes, by making him lie with his arms exposed, and by giving him whatever he drinks perfectly cold; but in sweats which are likely to be critical, the practitioner must take care to regulate the admission of air, so as that it shall not prove prejudicial.

By adopting these precautions at an early period, we may often prevent miliary eruptions, which might otherwise have appeared: and after they have made their appearance, we probably may be able to moderate them, by using the same means.

Miliary eruptions sometimes accompany inflammatory affections; in which cases it will be necessary to have recourse to gentle aperients, or laxative clysters; but bleeding ought never to be used. They are found to attend more usually on diseases where much debility prevails, or where there is a disposition to putrescency; in which instances the patient's strength must be supported with wine and a nutritive diet; making use at the same time of tonics, the cinchona bark, mineral acids, and other antiseptics, as advised under the head of Typhus Gravior. Whatever debilitates, is, in most cases of miliary fever, pernicious; whatever supports the vigour of the system, beneficial.

Great sickness at the stomach is apt to precede any fresh eruptions that come out in the course of the disease, and to prove very distressing. To allay it, we may order small and frequently repeated doses of the *mistura camphoræ*.

Where delirium or coma comes on, blisters will be proper. When a retrocession of the eruption happens, our principal view should be to bring out and support a sweat by powerful diaphoretics, camphor, ammonia, frictions to the skin, external warmth,

pediluvium, &c. Where any considerable evacuation ensues on a retrocession, we must be careful not to check it hastily. Should convulsions supervene thereon, musk and opium are particularly recommended.

To prevent the disease from arising in pregnant women, costiveness ought carefully to be guarded against; and when in child-bed, they should strictly observe a cool regimen, and keep their chamber of a proper temperature, being at the same time lightly covered with clothes.

PEMPHIGUS, OR VESICULAR ERUPTION.

THIS disease consists in eruptions dispersed over different parts of the body, internal as well as external, which gradually rise up into vesicles of about the size of a large nut, containing a yellow, serous fluid, that is in some instances of an ichorous nature, and which again disappear in the course of three or four days. By some authors it is described as being attended both by fever and contagion; and by others as being accompanied by neither. It is therefore supposed that there are two species of it, the chronic and the acute. The disease is, however, of very rare occurrence. Dr. Willan* describes three varieties of it, viz. pemphigus vulgaris, pemphigus contagiosus, and pemphigus infantilis; but he has never seen any instance of the first two. The last, he says, occurs sometimes in weak, emaciated children, who are destroyed by the pain and irritation of the successive vesications and ulcerations.

By the generality of the physicians who have favoured us with their opinions, the principal of whom is Dr. Dickson†, it has not been considered as contagious. This gentleman saw six cases of the complaint, in none of which it was received by contagion, nor communicated to those who attended the sick. Dr. Cullen informs us, that the blisters are filled with a thin ichor, which is discharged, not absorbed, as mentioned by Dr. Dickson; but during his whole practice it appears that he met only with a single case of pemphigus.

Some slight degree of lassitude, sickness, and headach having prevailed for a day or two, small vesicles of about the size of a pea make their appearance over different parts of the body, and not unfrequently in the mouth, and other portions of the alimentary canal; and these gradually increase till they become as large as a nut or almond. Now and then they are to be met with of the size of a walnut. They are surrounded by an inflamed margin, or areola, and distended with a faintly yellow serum. They often are accompanied with difficulty of deglutition, nausea, vomiting, a sense of soreness in the abdomen, and intense heat of the skin. Some-

* See his Treatise on Cutaneous Diseases.

† See his Paper on Pemphigus, in the Transactions of the Royal Irish Academy, 1787.

times they are so numerous as to run into each other. The pulse during this time is small and frequent, and the patient is sensible of a considerable degree of debility.

An intense burning heat of the skin appears to be a prominent feature of the disease; and in no other exanthematous fever is there usually felt so strong a sensation of heat; the vesicular eruption appearing to be the consequence of extreme action of the capillary vessels, thereby generating an increased evolution of heat, and augmenting the virulence of the discharge. The sensation it conveys to the patient is somewhat similar to a common scald, with a train of concomitant febrile symptoms.

After the vesicles have remained for some days, they either break and discharge their contents, or they begin to shrink, and so disappear.

This seems to be the most favourable termination, as they have been known to leave troublesome ulcers behind them when they broke.

Pemphigus resembles the small-pox, in frequently leaving pits in the skin, and in the parts which the vesicles occupied remaining of a dark colour for a considerable time afterwards. In the third volume of *Medical Facts and Observations*, Dr. Winterbottom takes particular notice of this occurrence.

We are to be influenced in our prognosis by the seat and appearance of the vesicles. When they appear only on external parts, and are not numerous, they demand little attention: when they are numerous, when they attack the alimentary canal, and are attended with a small hard pulse, and great prostration of strength, the danger is considerable. The danger is likewise very great when the ulcers left by the vesicles shew a tendency to gangrene, by becoming livid; which seldom happens, however, unless a fever of the true typhoid kind has accompanied the eruption.

On taking a comprehensive survey of what has been recorded by eminent writers on the subject, (and in addition to those already referred to, I beg leave to add Dr. Hall*,) we must, I think, conclude, that pemphigus is an affection merely sporadic, and not of a contagious nature; that it is connected with a state of debility; and that the symptoms accompanying one or other instances of this affection are those which attend febrile diseases, whether inflammatory or putrid. The most important distinctions necessary to be ascertained appear therefore to be,

1st, Whether the fever is of an inflammatory nature, and accompanied with a strong and increased action of the vascular system: or,

2dly, Whether the fever has a tendency to the typhoid type, and is marked by great debility, and other symptoms which denote a tendency of the fluids to putrefaction. It will be

* See Essay on Pemphigus, by Dr. Hall, in volumes 3d and 4th of the *Edinburgh Annals of Medicine*.

obvious, that in the first case evacuation and other antiphlogistic remedies will be proper; and that in the second it will, on the contrary, be necessary to shun all evacuations, and to employ those remedies alone which support the strength, and give tone and vigour to the system.

In some cases the disease seems to be connected with a certain state of debility, and a tendency of the fluids to putrefaction, and therefore the indications of cure are obvious.

Having cleansed the stomach by a gentle emetic, where nausea prevails, and dislodged the contents of the intestines by some mild laxative, such as the saline purgatives, or small doses of the submuriate of mercury with jalap, we may then give the cinchona bark, either in infusion, decoction, or powder, along with wine. The mineral acids, in a state of proper dilution, if administered early, will likewise be of service in obviating the effects of debility, and any tendency to putrefaction.

On the first accession of the disorder, if the skin is hot and dry, it may be of service to give the saline medicine, with small doses of some mild antimonial, in order to excite a gentle diaphoresis; but these should not be continued long.

To diminish the effects of irritation, opiates combined with sulphuric æther will be proper.

Where vesicles arise in the mouth, and break, so as to become ulcers, we should then employ detergent gargles, as advised under the head of *Cynanche Maligna*.

If there is reason to apprehend that the eruption has extended to the alimentary canal, it will be necessary to order copious draughts of some mucilaginous decoction, as mentioned under the head of *Aphtha Chronica*.

When obstinate ulcers are formed on any exterior part of the body, in consequence of the vesicles breaking, the assistance of a surgeon will be requisite.

Some practitioners are in the habit of opening the larger vesicles, but the propriety of this step is not yet fully established.

On recovery, the patient's strength is to be recruited by tonics and other auxiliaries, as noticed under the head of *Dyspepsia*.

URTICARIA, OR NETTLE-RASH.

THIS disease takes its name from its being attended by an eruption in the skin, similar to what is produced by the stinging of nettles, and terminates in a desquamation of the cuticle. Dr. Willan, in his *Treatise on Cutaneous Diseases*, notices six varieties of it.—See Order III.

In some instances, a slight degree of fever either precedes or attends the eruption: this is not confined to any particular parts of the body, but is somewhat dispersed, being always accompanied with a considerable degree of heat and itching. In some persons it lasts only a few days, in others many months, appearing

and disappearing at intervals. It usually recedes in the day-time, and in the evening breaks forth again, accompanied sometimes with slight febrile symptoms. In some cases urticaria is characterized by large wheals or bumps, which, on pressure, appear of a solid nature, without any cavity or head; nor do they contain any kind of fluid.

The causes of urticaria are by no means obvious, but it has been supposed to arise from suppressed perspiration, or some irritating matter in the stomach. A disease very similar to febrile urticaria is produced in particular constitutions by substances received into the stomach which prove offensive, such as almonds, mushrooms, crab-fish, muscles, lobsters, herrings, &c. When a person is poisoned by fish of a deleterious nature, it frequently shews itself as a consequence thereof. (See Animal Poisons.) The effect is rapid, and the symptoms are violent for some hours. In consequence of such circumstances, physicians have been induced to conclude that urticaria, attended with fever, originates generally from indigestion, or from some substance of a noxious quality taken into the stomach.

The nettle-rash readily gives way in general to a cool regimen, and keeping the body open with mild laxatives, such as the potassæ supertartras, or any of the neutral salts. When it has arisen from any thing noxious being eaten, an emetic should be administered at the commencement of the attack. If it proves obstinate, we may resort to small doses of the submuriate of mercury and nitric acid. An infusion of serpentaria, made in the proportion of two drachms to a pint of water, is spoken very favourably of by a late writer* on chronic urticaria†.

ORDER IV.

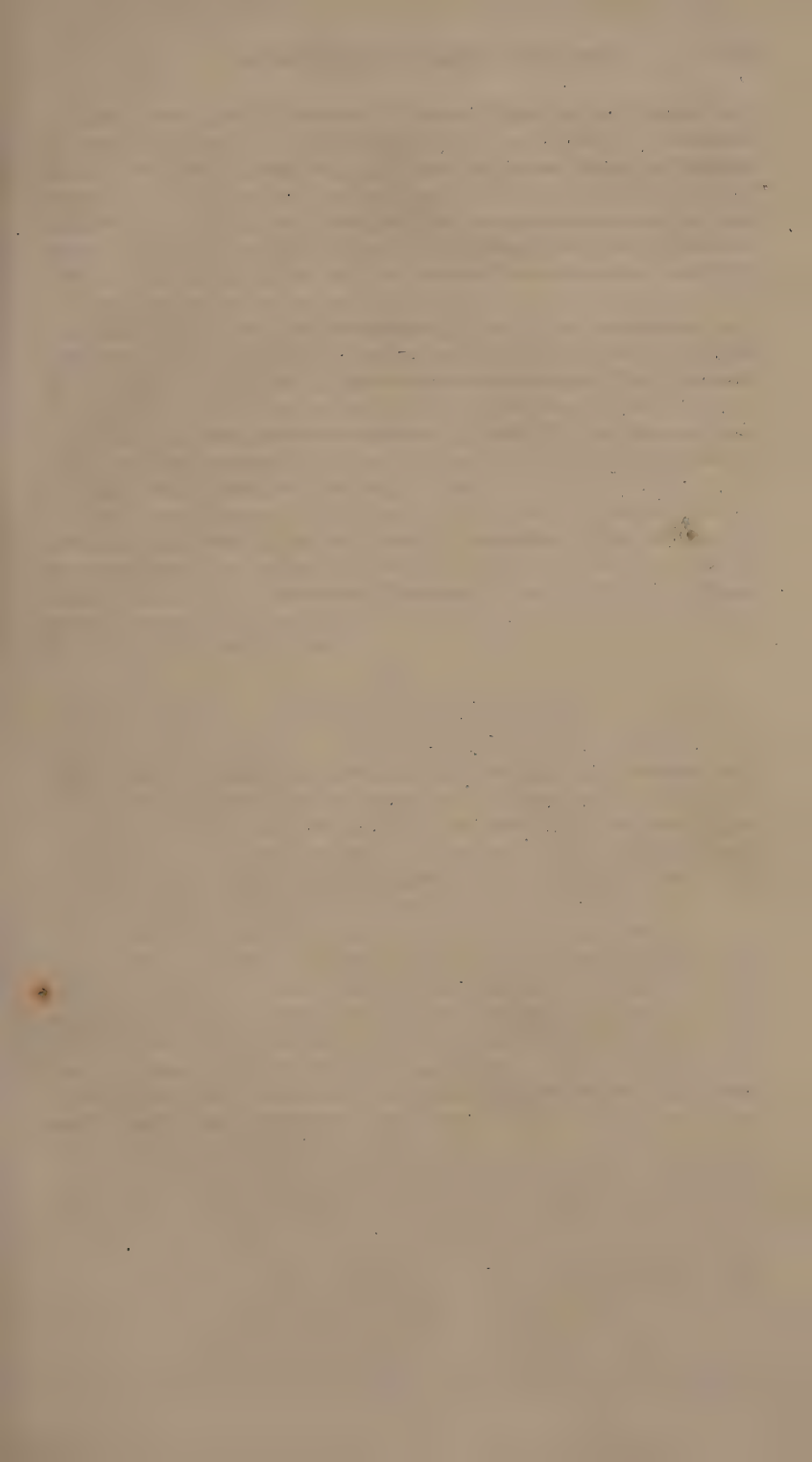
HÆMORRHAGIÆ, OR INVOLUNTARY DISCHARGES OF BLOOD.

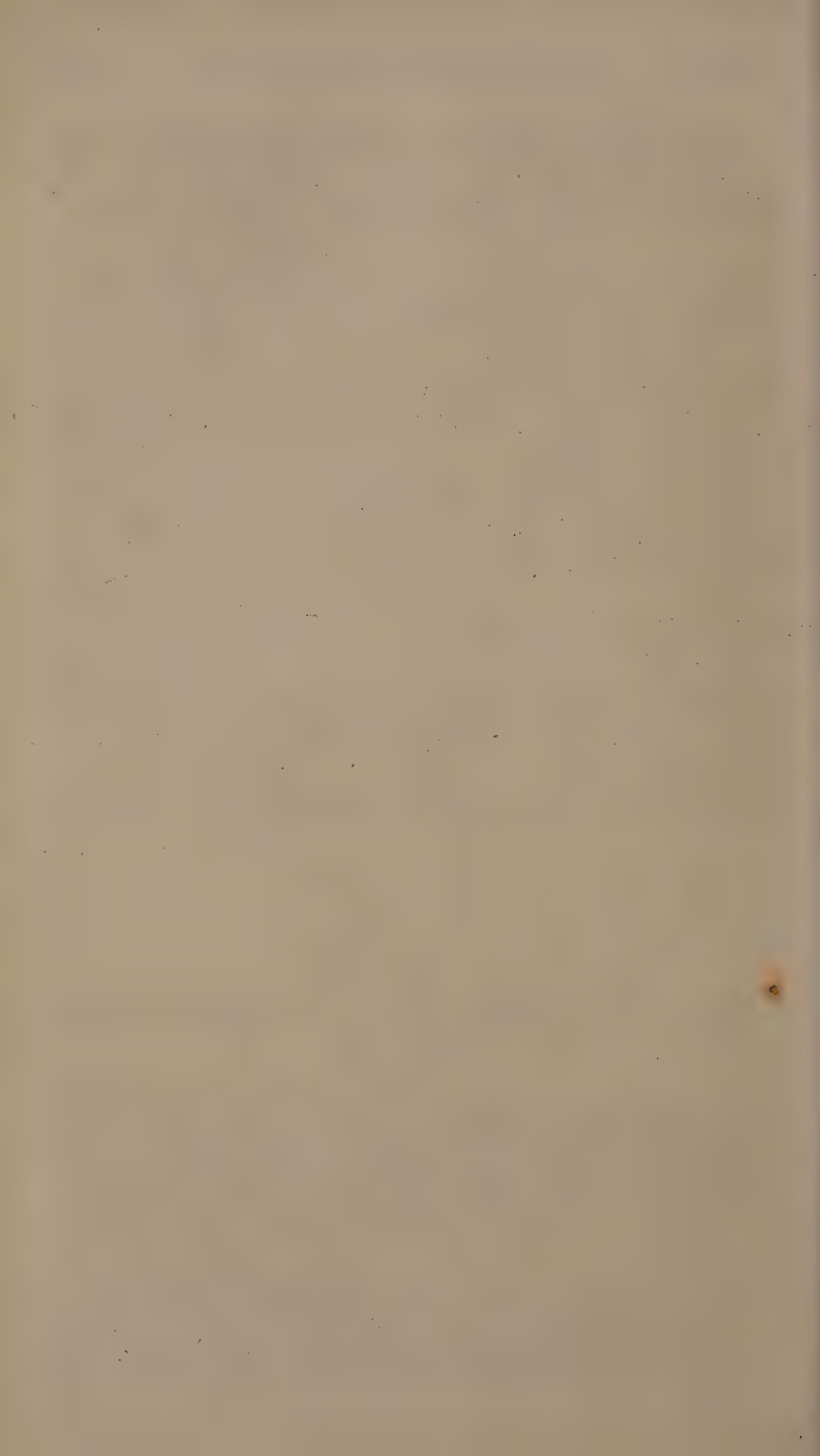
UNDER this title are comprehended active hæmorrhages only; that is, those attended with some degree of symptomatic fever, and which depend upon an increased impetus of the blood in the vessels from which it flows, chiefly arising from an internal cause. On venesection the blood appears as in the cases of phlegmasiæ; that is, the gluten separated, or a crust formed.

* See Mr. Cook's Practical Treatise, &c. p. 209.

† According to the nosological arrangement of Dr. Callen, Aphtha should have followed next as one of the Exanthemata; but being more frequently met with among infants than persons of a mature age, it has been inserted among the diseases of the infantile state.

Cachexia aphthosa, or chronic thrush, not being an idiopathic disease, but symptomatic of some other, such as general debility, is placed in the class Cachexia.





The general remote causes of hæmorrhages of this nature are, external heat, a sanguine and plethoric habit, whatever increases the force of the circulation, as violent exercise, strong exertions, anger, and other active passions, particular postures of the body, ligatures producing local congestion, a determination to certain vessels, rendered habitual from the frequent repetition of hæmorrhage, the suppression of accustomed evacuations, external violence, and exposure to cold.

Hæmorrhages may be occasioned either by too copious a production of the vital fluid, by some partial accumulation of it, or by the laxity or tenuity of the vessels which contain it. Hæmorrhage seldom, however, comparatively speaking, arises from a more than ordinary mass or impetus of blood, but in general from a want of that contractile power in the artery which is necessary to resist its tendency to effusion.

The general treatment of hæmorrhages must consist in putting a stop to the discharge of the blood; in preventing its recurrence, by removing the causes by which they were excited, and by destroying the inflammatory diathesis when any exists. These means remain to be pointed out under each distinct hæmorrhage, as in the subsequent pages.

EPISTAXIS, OR HÆMORRHAGE FROM THE NOSE.

IN the nose there is a considerable net-work of blood-vessels expanded on the internal surface of the nostrils, and covered only with a thin tegument: hence, upon any determination of a greater quantity of blood than ordinary to the vessels of the head, those of the nose are easily ruptured. In general the blood flows only from one nostril; but in some cases it is discharged from both, then shewing a more considerable disease.

Persons of a sanguine and plethoric habit, and not yet advanced to manhood, are very liable to be attacked with this complaint; females being much less subject to it than males, particularly after menstruation has commenced. Peculiar weakness in the vessels of the part, and the decline of life, may also be considered as predisposing causes. Great heat, violent exertion, external violence, particular postures of the body, and every thing that determines the blood to the head, are to be looked upon as its exciting causes.

Epistaxis comes on at times without any previous warnings; but at others, it is preceded by a pain and heaviness in the head, vertigo, tinnitus aurium, flushing in the face, heat and itching in the nostrils, a throbbing of the temporal arteries, and a quickness of the pulse. In some instances, a coldness of the feet, and shivering of the whole body, together with a costive belly, are observed to precede an attack of this hæmorrhage.

The complaint is to be considered as of little consequence when occurring in young persons, being seldom attended with danger;

but when it arises in those who are more advanced in life, flows profusely, and returns frequently, it indicates too great a fulness of the vessels in the head, and not unfrequently precedes apoplexy, palsy, &c., and therefore in such cases is to be regarded as a dangerous disease.

When this hæmorrhage arises in any putrid disorder, it is to be considered as a fatal symptom.

As a bleeding from the nose proves salutary in some disorders, such as vertigo and headach, and is critical in others, such as phrensy, apoplexy, and inflammatory fever, where there is a determination of too great a quantity of blood to the head; we ought properly to consider, at the time it happens, whether it really is a disease, or intended by nature to remove some other.

When it arises in the course of some inflammatory disorder, or in any other where we have reason to suspect too great a determination of blood to the head, we may suppose that it will prove critical, and therefore we should suffer it to go on, at least as long as the patient is not weakened by it.

Neither should it be suddenly stopped, when it happens to persons in good health, who are of a full and plethoric habit. In short, where a bleeding at the nose relieves any disagreeable symptom, and does not proceed so far as to induce debility, it ought not to be hastily checked.

When it arises in elderly people, or returns too frequently, or continues till the patient becomes faint, it ought to be put a stop to as quickly as possible: to effect this, the person is to be exposed freely to cool air, and to be placed nearly in an erect position, with his head somewhat inclined backwards; to drink freely of cold liquors, and to make use of an antiphlogistic regimen. Besides these means, he may immerse his head in water impregnated with ammonia muriata, or common salt, and snuff vinegar diluted with cold water frequently up the nose; or he may throw some astringent wash* repeatedly up the nostril from which the hæmorrhage proceeds, by means of a syringe.

Should the bleeding nevertheless continue, a dossil, dipped either in a solution of the sulphate of copper in water, the

* 1. R Zinc. Sulphat. 3j.
Plumbi Acet. gr. x.
Aq. Distillat. f. ʒx. M.
ft. Injectio.

Vel,

2. R Aluminis in pulv. trit. ʒij.
Aq. Rosæ, f. ʒvj.
Acidi Acetici dilut. f. ʒj. M.

Vel,

3. R Tinct. Ferri Muriatis, f. ʒiss.
Aq. Distillat. f. ʒvj. M.

* 1. Take Sulphate of Zinc, one drachm.
Acetate of Lead, ten grains.
Distilled Water, ten ounces.
Mix them for an injection.

Or,

2. Take Powdered Alum, two drachms.
Rose Water, six ounces.
Distilled Vinegar, one ounce.

Mix them, and use the liquor as a wash or injection.

Or,

3. Take Tincture of the Muriate of Iron,
one drachm and a half.
Distilled Water, six ounces.

Mix them.

sulphate of iron in brandy, or in Ruspini's styptic, may be introduced up the nostril. A tent, wetted with the compound tincture of benzoin, and afterwards rolled in equal parts of alum and sulphate of zinc, may be tried upon a failure of the former. One of the most powerful styptics, however, which we can use, is powder of charcoal. In epistaxis, it may be applied by means of tents, first moistened with water, and then dipped in this powder; but in slight cases, it will answer by being taken like snuff.

To assist the effect of all such applications, a little cold water may be sprinkled with the fingers on the patient's face, and the genitals of a male be immersed now and then in the same fluid.

Dr. Darwin mentions in his *Zoonomia* the case of a lady who had a continued hæmorrhage from her nose for several days; the ruptured vessel was not to be reached by plugs up the nostrils, and the sensibility of her fauces was such, that nothing could be borne behind the uvula. After venesection, and other common applications, she was directed to immerse her whole head in a pail of water, which was made colder by the addition of several handfuls of salt; in consequence of which, the hæmorrhage immediately ceased, and returned no more; but her pulse continuing hard, she was necessitated to lose blood from the arm on the succeeding day.

In epistaxis, the application of pressure to the mouth of the bleeding vessel is often attended with a good effect, when other means prove unsuccessful: to effect which, a piece of hog's gut, that has been previously dried and moistened again, may be used. One end of it, being firmly tied with a bit of small packthread, is, by means of a probe, to be pushed along the course of the nostril from which the blood is discharged, to the upper part. The gut is then to be filled with cold vinegar and water by means of a syringe inserted at the end hanging out of the nostril; and, as much being injected as the gut will admit, the whole is to be pressed up as far as possible, and to be then secured in this situation by a proper bandage.

While we are pursuing these steps, we are at the same time to open the body, if necessary, with cooling purgatives, in order to make some derivation from the vessels of the head: and the patient is carefully to avoid all those circumstances which might either determine the blood to the head; or prevent its free return from it.

Refrigerants, such as the saline medicine, with nitre, may be advised every hour or so, the patient drinking cold acidulated liquors, and exposing himself freely to cool air.

Vel,

4. R. Acid. Sulph. Dilut. f. ʒiiss — f. ʒij.

Aq. Puræ, f. ʒijss. M.

Or,

4. Take Diluted Sulphuric Acid, a drachm and a half, or two drachms.

Pure Water, two ounces and a half.

Mix them.

Astringents, such as the sulphate of zinc, alum, and plumbi acetat, with opium, are sometimes given internally: but their effect seems doubtful, as they seldom have time to act. When the complaint is of long duration, they may be used as below*. Alum, catechu, and gum kino, are astringents more applicable for hæmorrhages from the lungs, stomach, and intestines, than for epistaxis.

In this hæmorrhage, as well as in all other active ones, the tincture of digitalis, given in doses of thirty drops from a two-ounce phial (the size will make some difference in the drops) every six hours for four or five doses, may prove an efficacious remedy, particularly in full robust habits, or where there is a quickened circulation.

In obstinate cases, the application of a blister to the neck has occasionally produced a good effect.

After the bleeding has ceased, the patient must be careful not to remove the tents or clotted blood, but should allow them to come away of themselves; and in order to avoid any return of the hæmorrhage, he must be kept as still and quiet as possible, taking care not to apply any thing of a stimulating nature to the nose.

It sometimes happens, that when the bleeding is stopped outwardly, it nevertheless continues inwardly, and prevails in so high a degree as to threaten suffocation, particularly when the person

* 5. R Infus. Rosæ Comp. f. ℥vj.

Potassæ Nitrāt. ʒj. M.
ft. Mistura, cujus sumat cochl. larg. iij.
tertia quaq. hora.

Vel,

6. R Acid. Sulph. Dilut. ℥ xvi.

Aq. Font. f. ℥jss.

Syrup. Rosæ, f. ʒij.

Tinct. Opii, ℥ x. M.

Pro haustu, ter quaterve in die sumendo.

Vel,

7. R Zinc. Sulphat. gr. $\frac{1}{4}$ — $\frac{1}{2}$.

Aluminis, gr. x.

Infus. Rosæ Compos. f. ℥jss.

Syrup. Rosæ, f. ʒj. M.

ft. Haustus, 6tis horis adhibendus.

Vel,

8. R Aq. Distillat. f. ℥jss.

Plumbi Acet. gr. j.—ij.

Tinct. Opii, ℥ x.—xij.

Syrup. Rosæ, f. ʒj. M.

ft. Haustus, sexta quaque hora capiendus.

* 5. Take Compound Infusion of Roses, six ounces.

Nitrāt of Potass, one drachm.

Shake them together, and of this mixture take three large spoonful every third hour.

Or,

6. Take Diluted Sulphuric Acid, twenty-four drops.

Pure Water, one ounce and a half.

Syrup of Roses, two drachms.

Tincture of Opium, fifteen drops.

Mix them for a draught, to be taken three or four times a day.

Or,

7. Take Sulphate of Zinc, one quarter or half a grain.

Alum, ten grains.

Infusion of Roses, one ounce and a half.

Syrup of the same, one drachm.

Mix them for a draught, to be administered every six hours.

Or,

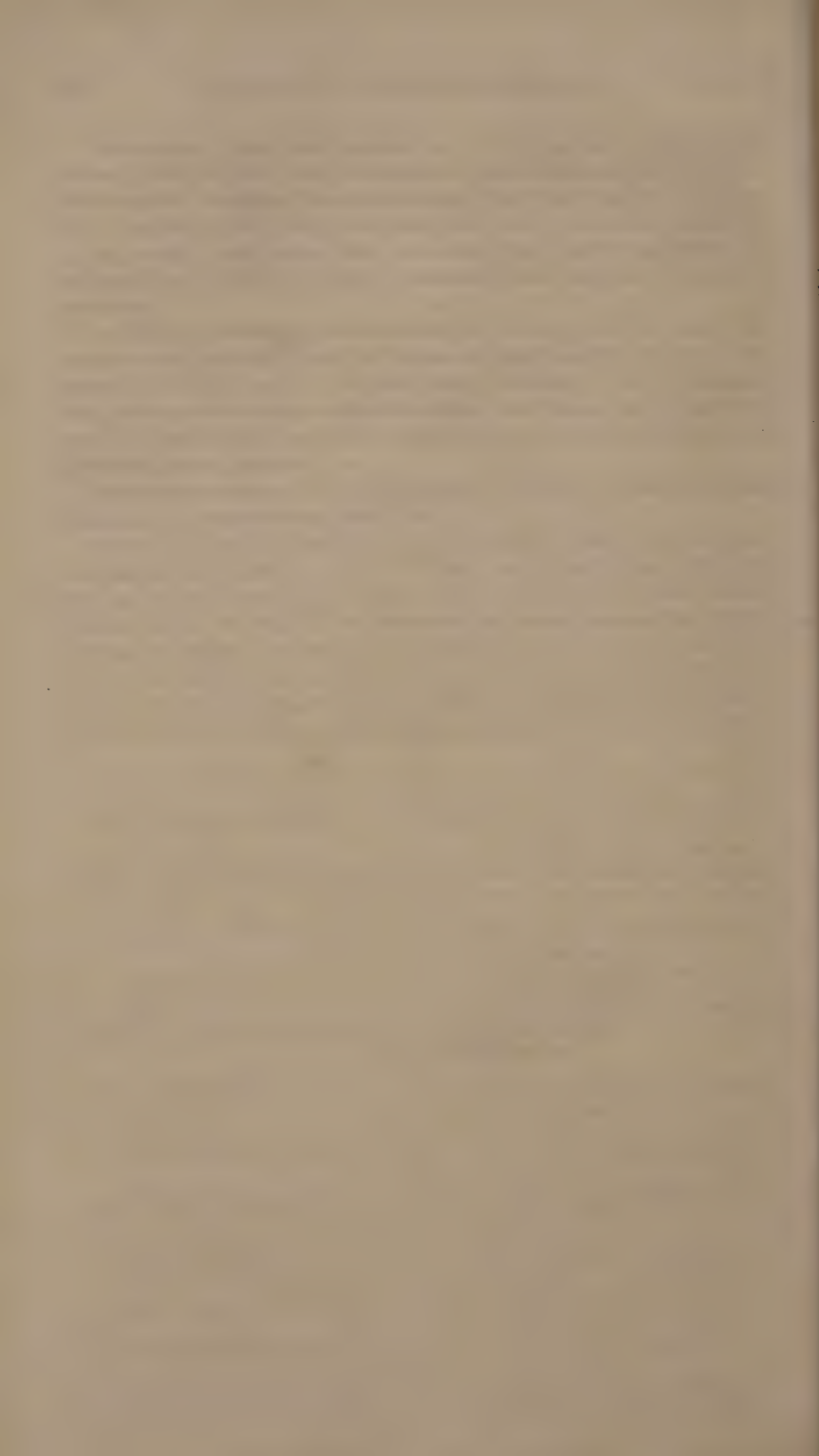
8. Take Distilled Water, one ounce and a half.

Acetate of Lead, from one to two grains.

Tincture of Opium, fifteen to twenty drops.

Syrup of Roses, one drachm.

This draught may be taken every six hours.



falls asleep. In such cases the passage may be stopped by introducing a pliable probe up the nostril, through the eye of which some strong threads have been passed and so bringing it out at the mouth, then fastening pieces of sponge to their extremities, afterwards drawing them back, and tying them on the outside with a sufficient degree of tightness.

Where epistaxis arises in adults of a full plethoric habit, a frequent use of cooling purgatives, and an antiphlogistic regimen, may probably prevent any return of the complaint. When occasioned by too great a determination of blood to the head, topical bleeding, by means of leeches to the temples, will be advisable.

When it is occasioned by the suppression of some accustomed evacuation, such as the menstrual or hæmorrhoidal flux, this is to be restored if possible; but if we do not succeed, some other discharge, by means either of an issue or seton, must be substituted.

HÆMOPTYSIS, OR SPITTING OF BLOOD.

IN hæmoptysis there is a discharge of blood of a florid colour, and often frothy, from the mouth, brought up with more or less of coughing or hawking, and preceded usually by a saltish taste in the saliva, a sense of weight about the præcordia, difficult respiration, and a pain in some part of the thorax.

It is readily to be distinguished from hæmatemesis, as in this last the blood is usually thrown up in considerable quantities; is moreover of a darker colour, more grumous, and mixed with the other contents of the stomach, and is unattended by any cough; whereas blood proceeding from the lungs is usually in small quantity; is of a florid colour, fluid, mixed with a little frothy mucus, and brought up by coughing.

A spitting of blood arises most usually between the ages of sixteen and twenty-five, and may be occasioned by any violent exertion, either in running, jumping, wrestling, singing, speaking loud, or blowing wind instruments, as likewise by wounds, plethora, pneumonia, weak vessels, hectic fever, coughs, irregular living, excessive drinking, or the suppression of some accustomed discharge, such as the menstrual or hæmorrhoidal. It may likewise be occasioned by breathing air which is too much rarefied to be able properly to expand the lungs.

Persons in whom there is a faulty proportion either in the vessels of the lungs, or in the capacity of the chest, being distinguished by a narrow thorax and prominent shoulders, or who are of a delicate make and sanguine temperament, or who have had previous affections of the same disease, seem much predisposed to this hæmorrhage: but in these the complaint is often brought on by the concurrence of the various occasional and exciting causes before mentioned.

A spitting of blood is not however always to be considered as a primary disease. It is often only a symptom; and in some disorders, such as pleurisies, peripneumonies, and many fevers, often arises: and is the presage of a favourable termination, if only very slight.

Sometimes it is preceded (as has already been observed) by a sense of weight and oppression at the chest, a dry tickling cough, some slight difficulty of breathing, and a hard jerking pulse. At other times it is ushered in with shiverings, coldness of the extremities, pains in the back and loins, flatulency, costiveness, and lassitude. The blood which is spit up is sometimes thin, and of a florid red colour; and at other times it is thick, and of a dark or blackish cast: nothing, however, can be inferred from this circumstance, but that the blood has lain a longer or shorter time in the chest before it was discharged.

An hæmoptoe is not usually attended with danger, where no symptoms of phthisis pulmonalis have preceded or accompanied the hæmorrhage; where it leaves behind no cough, dyspnœa, or other affection of the lungs; or where there is no malconformation of the pulmonary system: nor is it dangerous in a strong healthy person of a sound constitution, unless the hæmorrhage is very great; but when it attacks persons of a weak lax fibre and delicate habit, it may be difficult to remove it.

It seldom takes place to such a degree as to prove fatal at once; but when it does, the effusion is from some large vessel. The danger, therefore, will be in proportion as the discharge of blood comes from a large vessel or a small one, and as the quantity is profuse or trifling.

When the disease proves fatal in consequence of the rupture of some large vessel, there is found, on dissection, a considerable quantity of clotted blood between the lungs and pleura, and there is usually more or less of an inflammatory appearance at the ruptured part. Where the disease terminates in pulmonary consumption, the same morbid appearances are to be met with as described under that particular head.

In an hæmoptoe, the effusion is to be moderated by a strict observance of the antiphlogistic plan; by carefully avoiding heat, and every kind of bodily exertion, and where the hæmorrhage is severe, even speaking; by employing occasionally cooling purgatives*, such as manna, tamarinds, phosphorated soda, sulphate of potass, &c.; and by making use of a light vegetable diet, with

* 1. R. Infus. Rosæ Compos. f. ʒiss.

Magnes. Sulphat. ʒij. M.

ft. Haustus, bis in die adhibendus.

* 1. Take Compound Infusion of Roses, one ounce and a half.

Sulphate of Magnesia, three drachms.

Mix them, and take this draught twice in the day.

ice and other refrigerants*. Cold acidulated liquors should be taken for ordinary drink. Dr. Darwin is of opinion, that one immersion in cold water, or a sudden sprinkling all over with it, might probably stop a pulmonary hæmorrhage. Indeed, the application of cold to the genitals, or immersing the feet, and even the lower part of the body, ought in no case of hæmoptysis to be neglected.

If the patient is hot and feverish, youthful, or of a plethoric habit, and has a hard jerking pulse, bleeding from the arm may be used with advantage, and the operation be repeated according to circumstances; but on the contrary, where there are marks of debility and laxity, and the blood is of a dark colour, depletion will be improper.

In all cases where the hæmorrhage is considerable, besides resorting to cooling purgatives and refrigerant medicines in the manner before mentioned, we ought to give astringents†, in order to stop it as quickly as possible; and if we find mild ones to fail, we must then employ others of a more powerful nature‡, taking care to exhibit some laxative, such as the oleum ricini, now and then, to prevent their having any deleterious effect.

* 2. R Infus. Rosæ Comp. f. ℥iss.

Potassæ Nitrat. gr. xv.

Tinct. Opii, ℥ x. M.

ft. Haustus, 4tis horis sumendus.

Vel,

3. R Potassæ Supertart. 3iij.

Potassæ Nitrat. 3ij. M.

ft. Pulv. capiat æger 3ss. pro dosi, ex cyatho parvo decocti hordei, vel aquæ frigidæ.

Vel,

4. R Acid. Sulph. Dilut. ℥ xvj.

Aq. Fontan. f. ℥jss.

Tinct. Opii, ℥ xij.

Syrup. Rosæ, 3j. M.

ft. Haustus.

† 5. R Aluminis, gr. viij.

Extract. Catechu, gr. x.

Confect. Rosæ, q. s. M.

ft. Bolus, 4ta quaq. hora sumendus, superbib. cochl. iij. magna Infusi Rosæ Comp.

Vel,

6. R Tinct. Kino,

—— Catechu, āā f. 3ss.

—— Opii, 3ij. M.

Capiat ℥ xx.—xxx. pro dos. ter quaterve in die.

‡ 7. R Zinci Sulphat. gr. ss.—ij.

* 2. Take Compound Infusion of Roses, one ounce and a half.

Nitrate of Potass, fifteen grains.

Tincture of Opium, fifteen drops.

Mix them for a draught, to be taken every four hours.

Or,

3. Take Supertrate of Potass, three drachms.

Nitrate of Potass, two drachms.

Mix them, and let the patient take half a drachm of the powder for a dose, dissolved in a teacupful of barley-water, or cold water.

Or,

4. Take Diluted Sulphuric Acid, twenty-four drops.

Pure Water, one ounce and a half.

Tincture of Opium, twenty drops.

Syrup of Roses, one drachm.

Mix them for a draught.

† 5. Take Powdered Alum, eight grains.

Catechu, ten grains.

Confection of Roses, a sufficiency to form a bolus, which may be taken every four hours, washing it down with three table-spoonful of the Compound Infusion of Roses.

Or,

6. Take Tincture of Kino,

—— Catechu, of each half an ounce.

—— Opium, two drachms.

Mix them well, and take from thirty to forty-five drops for a dose, three or four times a day.

‡ 7. Take Sulphate of Zinc, from half a grain to two grains.

The acetate of lead has been used freely, and with great advantage, in hæmoptysis. One grain every four or six hours may be employed with perfect safety. In cases attended with imminent danger, we may venture on two, or even three grains. It may be given in an infusion of roses, with a few drops of tinctura opii, or in the form of a pill, if more agreeable.

The remarkable operation of digitalis in retarding the pulse has suggested its use in cases of active hæmorrhage, and particularly in hæmoptoe, in which disease it has been used by many practitioners, and repeatedly by myself, with a very happy effect. It may be given in small doses, repeated twice or thrice a day, as prescribed here*.

Gum. Kino, gr. viij.

Opii, gr. ss.

Confect. Rosæ, gr. x. M.

ft. Bolus, ter de die adhibendus.

Vel,

8. R Cupri Sulphat. gr. v. solve in
Aq. Rosæ, f. $\frac{3}{4}$ viij. et adde

Tinct. Opii, \mathfrak{m} xl. M.

ft. Mistura, cujus sumat æger cochlear, larg.
4tis horis.

Vel,

9. R Infus. Rosæ Compos. f. $\frac{3}{4}$ jss.

Aluminis, gr. x.

Zinci Sulphat. gr. $\frac{1}{2}$.

Tinct. Opii, \mathfrak{m} x.

Syrup. Simpl. f. $\frac{3}{4}$ j. M.

ft. Haustus, 4tis horis capiendus.

Vel,

10. R Plumbi Acetat. gr. jss.—iij.

Opii, gr. ss.

Confect. Rosæ, q. s. M.

ft. Pilula, quarta vel sexta quaque hora
sumenda.

* 11. R Pulv. Digitalis Purp. gr. j.

Confect. Rosæ, gr. x. M.

ft. Bolus, mane, hora meridiana, et vespere
sumendus.

Vel,

12. R Infus. Digitalis, f. 3vi.

Plumbi Acet. gr. ij.

Tinct. Opii, \mathfrak{m} viij. M.

ft. Haustus, 6ta quaque hora adhibendus.

Vel,

13. R Infus. Rosæ Comp. f. $\frac{3}{4}$ jss.

Tinct. Digitalis, \mathfrak{m} x.

— Opii, \mathfrak{m} xii. M.

ft. Haustus, 6tis horis capiendus.

Gum Kino, eight grains.

Opium, half a grain.

Confection of Roses, ten grains.

Make them into a bolus, to be given three
times a day.

Or,

8. Take Sulphate of Copper, five grains.

Dissolve it in Rose Water, eight
ounces, and add

Tincture of Opium, sixty drops.

Of this mixture let the patient take a large
spoonful every four hours.

Or,

9. Take Compound Infusion of Roses, one
ounce and a half.

Alum, ten grains.

Sulphate of Zinc, half a grain.

Tincture of Opium, fifteen drops.

Syrup, one drachm.

Mix them for a draught, to be taken every
four hours.

Or,

10. Take Acetate of Lead, one grain and
a half to three grains.

Opium, half a grain.

Confection of Roses, a sufficiency
to make them into a pill, which may be
taken every fourth or sixth hour.

* 11. Take Powdered Purple Foxglove, one
grain.

Confection of Roses, ten grains.

Form a bolus, to be taken morning, noon,
and evening.

Or,

12. Take Infusion of Foxglove, six drachms.
Acetate of Lead, two grains.

Tincture of Opium, twelve drops.

Mix them for a draught to be taken every
six hours.

Or,

13. Take Compound Infusion of Roses,
one ounce and a half.

Tincture of Foxglove, fifteen
drops.

— Opium, eighteen Drops.

Mix them for a draught, to be taken every
six hours.

As a powerful sedative, the prussic acid will be likely to prove highly advantageous in hæmoptoe, particularly if accompanied by a dry convulsive cough. For the mode of administering it see Phthisis.

Should these remedies prove ineffectual in putting a stop to the hæmorrhage, we may make trial of Ruspini's styptic: but as it appears to possess very active powers, the full dose advised in the printed directions should not be continued after the bleeding stops. If its use is persevered in to prevent a return of the disease, the dose should be reduced to one half, and be repeated at longer intervals.

If the hæmorrhage resists all the means which have been advised, and there is reason to fear that the patient may sink under the loss of blood, it will be proper to apply a blister to the chest; which remedy has often been attended with much advantage in cases of this nature.

Dr. Rush tells us, that a table-spoonful or two of common salt is often successful when other means will fail.

When much coughing attends on hæmoptoe, it will be necessary to have recourse to opium, exhibited in small and frequently repeated doses along with the other remedies.

Different preparations of the hyoscyamus have been successfully employed in hæmoptoe by the German physicians*; but being in the possession of so active a remedy as the digitalis for suppressing pulmonic hæmorrhage, by diminishing the action of the heart and arteries, it seems unnecessary to resort to this, except in those cases where we give it the preference to opium, with the view of tranquillizing the cough.

After the effusion is stopped, we are to use every possible means for preventing its return. If the complaint has arisen from predisposition, and where an inflammatory diathesis prevails, it may be necessary to obviate this by small bleedings, repeated according to the urgency of the symptoms; besides which, we may employ refrigerants and cooling purgatives occasionally, the patient at the same time adhering strictly to an antiphlogistic regimen, and avoiding all vigorous exertions of the body, agitations of the mind, and other occasional causes.

Sailing, travelling in an easy carriage, swinging, and riding gently on horseback, will be the most proper exercises.

Where the disease arises in persons of a lax fibre and delicate habit, it has been customary to exhibit the bark of cinchona and chalybeates. These seem, but more particularly the latter, to be unsafe medicines in all cases of active hæmorrhage, and have been experienced frequently to prove prejudicial in hæmoptoe, by increasing the phlogistic diathesis.

* See Extracts from Hufeland's Journal, in vol. iii. p. 576, of the Medical and Physical Journal.

Whenever there is a fixed pain in the chest, a blister may be applied over the part with considerable advantage.

HÆMATEMESIS, OR VOMITING OF BLOOD.

A HÆMORRHAGE of blood from the stomach is readily to be distinguished from one which proceeds from the lungs, by its being usually preceded by a sense of weight, pain, or anxiety in the region of the stomach; by its being unaccompanied by any cough; by its being discharged in a very considerable quantity: by its being of a dark colour, and somewhat grumous; and by its being mixed with the other contents of the stomach.

The disease may be occasioned by any thing received into the stomach which stimulates it violently or wounds it; or may proceed from blows, bruises, or any other cause capable of exciting inflammation in this organ, or of determining too great a flow of blood to it: but it arises more usually as a symptom of some other disease (such as a suppression of the menstrual or hæmorrhoidal flux, or obstructions in the liver, spleen, and other viscera,) than as a primary affection.

Towards the close of scarlatina maligna, typhus gravior, and other disorders of a like nature, where symptoms of putrescency prevail in a high degree, a hæmorrhage from the stomach is very apt to arise.

Hæmatemesis is seldom so profuse as to destroy the patient suddenly; and the principal danger seems to arise, either from the great debility which repeated attacks of the complaint induce, or from the lodgment of blood in the intestines, which, by becoming putrid, might occasion some other disagreeable disorder.

The appearances to be observed on dissection, where it proves fatal, will depend on the disease of which it has been symptomatic.

Where this complaint has arisen in a plethoric habit, and is attended with febrile symptoms, or such as indicate an inflammatory diathesis, it may be necessary to take away a small quantity of blood from the arm; but the great debility which the disease produces of itself will not admit of this operation under any other circumstances.

In moderate attacks of the disorder it may be sufficient to make use of refrigerants, as advised under the head of Hæmoptysis, together with small doses of opium repeated twice or thrice a day, confining the patient at the same time to food of a light nutritive nature, and directing him to take some kind of cool acidulated beverage for his ordinary drink: but if these means do not quickly allay the hæmorrhage, we ought then to employ powerful astringents and sedatives, as advised under the last-mentioned disease. During the use of these medicines, it will be necessary, however, to give some gentle laxative (such as the oleum ricini) now and then, in order to obviate costiveness and prevent any deleterious effects.

In hæmatemesis I have the strongest reasons for presuming that there is not a more effectual astringent than the *tinctura ferri muriatis*; for by being applied here immediately to the mouth of the bleeding vessel, it acts as a styptic. It may be given in doses of twenty or thirty drops in a little cold water, and be repeated every hour or two, till the hæmorrhage ceases. Should it resist this medicine, we may make use of Ruspini's styptic.

It is said that large doses of *spermaceti* have been given in this disorder with success; but its use seems more likely to prove beneficial after the hæmorrhage has ceased than during its continuance, particularly where the effusion is considerable. If the practitioner is disposed to make a trial of it in mild cases, he can give it as below*.

The application of a blister to the abdomen in severe attacks is sometimes attended with a good effect.

When the hæmorrhage is stopped, it will be advisable to discover, if possible, the cause from which it proceeded, and by removing that or the primary disease, to prevent any return of the complaint.

Where hæmatemesis arises in putrid diseases, we must have recourse to the most powerful antiseptics.—See *Typhus Gravior*.—Where scirrhus tumours of the liver or spleen exist, and seem to have given rise to the hæmorrhage, we must resort to *hydrargyrum*, *conium*, and the other means advised in chronic hepatitis and splenis.

A modern writer† informs us, that he has met with a variety of this disease in females from eighteen to thirty years of age, and by no means originating in organic affection of the stomach or viscera connected with it, that resisted the usual routine of treatment with cold acidulated liquors and different emmenagogues, but which readily gave way, by procuring copious and free alvine evacuation, by the exhibition of purgatives.

HÆMATURIA, OR VOIDING OF BLOOD BY URINE.

THIS disease is sometimes occasioned either by falls, blows, bruises, or some violent exertion, such as hard riding and jumping; but it often arises from a small stone lodged either in the

† See Observations on the Utility of Purgative Medicines, by Dr. Hamilton, page 109.

* 1. R *Cetacei*, ℥ss.
Vitel. Ovi, q. s. Terantur in mortar.
marmoreo, et adde

Aq. Pulegii, f. ℥j.

— *Fontan.* f. ℥v.

Potassæ Nitratis, ℥j.

Tinct. Opii, m̄ xl. M.

ft. Mistura, cujus sumat cochl. larg. iii. 3tia
vel 4ta quaq. hora.

* 1. Take *Spermaceti*, half an ounce.
Yolk of Egg, a sufficiency. Let
them be mixed in a marble mortar, and
then add

Pennyroyal Water, one ounce.

Pure Water, five ounces.

Nitrate of Potass, one drachm.

Tincture of Opium, sixty drops.

Of this mixture, let three large spoonful be
taken every three or four hours.

kidney or ureter, which by its size or irregularity wounds the inner surface of the part it comes in contact with; in which case the blood discharged is most usually somewhat coagulated, and deposits a sediment of a dark brown colour, resembling the grounds of coffee. It is rarely, if ever, an idiopathic disease.

A discharge of blood by urine, when proceeding from the kidney or ureter, is commonly attended with an acute pain and sense of weight in the back, and some difficulty of making water, the urine which comes away first being muddy and high-coloured, but towards the close of its flowing becomes transparent, and of a natural appearance. When the blood proceeds immediately from the bladder, it is usually accompanied with a sense of heat and pain at the bottom of the belly.

It is distinguished from the high-coloured urine attendant on many diseases, by the deposite of a coagulum to the bottom of the vessel, and by its staining linen of a red colour.

The voiding of bloody urine is always attended with some danger, particularly when mixed with purulent matter. When it arises in the course of any malignant disease, it shews a highly putrid state of the blood, and always indicates a fatal termination.

The appearances to be observed on dissection will accord with those usually met with in the disease which has given rise to the complaint.

In the treatment of hæmaturia we must be guided by the cause which has occasioned it.

If it has arisen in consequence of some external injury, such as a blow or fall, or the patient is of a full plethoric habit, it may then be proper to make use of evacuation by bleeding, giving him a couple of table-spoonsful of an acidulated infusion of roses with a small quantity of nitre dissolved in it, every two or three hours; and employing some gentle purgative, such as the oleum ricini, magnesiæ sulphas, or sodæ sulphas, every second or third day, to keep the body open.

If the hæmorrhage should continue after these steps have been taken, we must resort to astringents, as noticed under the former heads, beginning with those of the milder kind. To allay irritation, we may also give opium in small doses every four or six hours. Where there is any deposite of a muco-purulent matter in the urine, about half a drachm of uva ursi in powder, three times a day, may be of service, the patient taking the double-acidulated soda-water for common drink.

When hæmaturia proceeds from a stone either in the kidney, ureter, or bladder, it is only to be cured by removing the cause; but as this may not be always practicable, we must then be contented to moderate the symptoms by making the patient drink plentifully of mucilaginous liquors, such as thick barley-water, solutions of gum. acaciæ, or a decoction of marshmallows, sweetened with honey; by giving him repeated small doses of opium, joined with refrigerants, as advised under the head of Hæmo-

ptysis, and by throwing emollient clysters frequently up the intestines.

A case of hæmaturia is recorded in the eighth volume of Medical Facts and Observations which had resisted repeated bleedings and warm bathing, saline purgatives, emetics of different kinds, camphor and opium in large doses, uva ursi, mephitic alkaline water, &c., and which was quickly and effectually removed by giving the patient a pint a day of a decoction of peach-leaves. This was prepared by boiling an ounce of dried leaves of the peach-tree (*Amygdala Persica* Linn.) in a quart of water, till it was reduced to a pint and a half.

When hæmaturia is symptomatic of some malignant disease, as putrid fever, &c., powerful antiseptics must be administered.

MENORRHAGIA, OR IMMODERATE FLOW OF THE MENSES.

A FLOW of the menses is to be considered as immoderate when it either returns more frequently than what is natural, continues longer than ordinary, or is more abundant than is usual with the same person at other times. With the extraordinary flux of this secretion there are usually pains in the back and belly, somewhat like those of child-birth.

The usual period of its visitations is from twenty-seven to thirty days. As to the time of its continuance, this is various in different women; but it seldom continues longer than six days, or less than three, and does not cease suddenly, but in a gradual manner. The quantity generally discharged, in a healthy and regular woman, is from four to six ounces at each visitation. Those of a lax and delicate constitution have, however, a more copious and longer continued discharge than persons of a robust habit: thus the full blooming country girl does not discharge half the quantity that the pale-faced lady of quality does.

The quantity of the menstruous fluid is greater in warm than in cold climates; so, if a woman lives in an atmosphere artificially warmed, much the same effect is produced. For practical purposes, it is of consequence to observe, that menstruation is a secretion, and not an effusion, of pure blood either from the arteries or veins. All blood from the sanguiferous vessels (with very few morbid exceptions) coagulates, whilst the fluid of the catamenia does not; whether it comes away in a dropping manner, or is retained in any considerable quantity, as in the case of imperforate hymen. For other observations on menstruation, see Amenorrhœa.

The causes of menorrhagia may be referred to,

1st, A plethoric state, or general fulness of habit.

2dly, Accidental circumstances determining the blood more copiously and forcibly into the uterine vessels; as violent exercise

in dancing, strokes or contusions on the belly, strains, and violent passions of the mind.

3dly, Irritations acting particularly on the uterus: as, great costiveness, obliging the person to much straining at stool; excess in venery, particularly during menstruation, or the application of wet and cold to the feet, which may determine a greater flow of blood than natural to the uterus.

4thly, Laxity and debility of the organ, arising from frequent child-bearing, difficult and tedious labours, or repeated miscarriages.

5thly, Those which induce debility of the whole system; as a sedentary and inactive life, indulging much in grief, and despondency, living upon a poor low diet, drinking freely of warm enervating liquors (such as tea and coffee), and living in very warm chambers; and,

6thly, Organic affections, such as scirrhus, polypus, ulceration, &c.

An immoderate flow of the menses arising from plethora is often preceded by headach, giddiness, or dyspnœa, and is afterwards attended with pains in the back and loins, some degree of thirst, universal heat, and a frequent, strong, hard pulse; but where it arises in consequence of a laxity of the organ, or of general debility, and such attacks are frequently repeated, the symptoms which attend are, paleness of visage, chilliness, laxity and flabbiness in the muscular fibres, unusual fatigue in exercise, a hurried respiration on the slightest effort, pains in the back on remaining any length of time in an erect posture, and coldness of the extremities, together with loss of appetite, indigestion, and a long train of nervous complaints.

If the disease has induced much debility by frequent and severe attacks, it is no uncommon occurrence for the feet to be affected with œdematous swellings, particularly towards the evening, and for a leuco-phlegmatic habit to take place.

In forming our prognostic in this disease, we must be directed by the nature of the cause which has given rise to it. If occasioned by a plethora, or a general fulness of the system, we need apprehend no danger, as a temporary debility will be the only inconvenience the woman will experience; but where it is produced by a laxity of the vessels of the organ, and is profuse, long continued, and of frequent occurrence, there will always be a risk of its inducing much general debility, and a leuco-phlegmatic habit. Leucorrhœa is a common consequence of it. Where it arises from an organic affection of the part, which is sometimes the case after the age of forty-five, it is usually deemed incurable.

When menorrhagia proves fatal in consequence of a scirrhus of the uterus, this organ is observed on dissection to be much increased in size, and its substance to be thick and hard; and when cut into, shews a firm structure intersected with membranous septa. The internal surface is at the same time usually ulcerated, and beset with ragged processes, and from these ulcerated parts the hæmorrhage proceeds.

If polypi are the organic affection, these on dissection are generally to be found adhering to some part near the neck of the womb, and they are surrounded with varicose vessels, which throw out the blood in considerable quantity when a rupture of any of them happens to take place.

Where a profuse flow of the menses is attended with pains in the back, and the patient is of a full and robust habit, with pyrexial symptoms, it may be proper to draw off a few ounces of blood; but in other instances venesection may very safely be omitted.

In general it will be sufficient to employ the other antiphlogistic means, such as keeping the body gently open with laxative medicines that give but little stimulus*; administering refrigerants†, such as nitre; making use of a spare regimen; drinking freely of cool acidulated liquors, such as lemonade or tamarind beverage, and keeping the chamber of a moderate temperature, and the bed, or mattress (which will be more proper), lightly covered with clothes. Besides adopting these means, the patient is to avoid an erect posture, and all such things as might prove exciting causes.

By avoiding these, and moderating the first beginnings of the disease, it is probable that women might in most cases prevent that debility which repeated and severe attacks are apt to occasion.

- * 1. R Potassæ Tartrat. ℥ss.
Mannæ Optim. ℥ij.
Aq. Fervent. ℥ij.
Tinct. Lav. C. 3ss. M.

ft. Mistura, cujus sumat dimidium pro dos.

Vel,

2. R Magnes. Sulphat. ℥ij.
Aq. Fervent. 3vj.
Tinct. Sennæ C. 3ss.

Syr. Rosæ, 3ij. M.
Cochl. larg. iv. pro dos. sumenda.

- † 3. R Potassæ Subcarbonat. ʒj.

Succ. Limon. f. 3ss.
Potassæ Niträt. gr. xv.
Aq. Font. f. 3j.
Syr. Simpl. f. 3ij. M.

ft. Haustus, 3tia hora capiendus.

Vel,

4. R Infus. Rosæ Compos. f. 3iss.

Potassæ Niträt. gr. x.
Adde, pro re nata,
Tinct. Opii, m. x. M.

ft. Haustus, 4tis horis repetendus.

- * 1. Take Tartrate of Potass, half an ounce.
Manna, three drachms.
Warm Water, three ounces.
Compound Tincture of Lavender,
half a drachm.

Shake them, and of this mixture take the half for a dose.

Or,

2. Take Sulphate of Magnesia, two ounces.
Warm Water, six ounces.
Compound Tincture of Senna, half an ounce.

Syrup of Roses, two drachms.

Of this mixture let four table-spoonsful be taken for a dose.

- † 3. Take Subcarbonate of Potass, one scruple.

Lemon Juice, half an ounce.
Nitrate of Potass, fifteen grains.
Pure Water, one ounce.
Common Syrup, two drachms.

Mix them, and take the draught every three hours.

Or,

4. Take Compound Infusion of Roses, one ounce and a half.

Nitrate of Potass, ten grains.
Adding, if necessary,
Tincture of Opium, fifteen drops.

Mix them, and repeat this draught every four hours.

When no symptoms denoting an increased action in the vessels of the uterus are present, and we suppose that the augmented secretion has arisen in consequence of a laxity of the vessels, besides keeping the woman in a recumbent posture, shunning much external heat, making use of refrigerants internally, and avoiding venery, costiveness, and the other remote causes, we should have recourse to sedatives and astringents, both of which may be used externally as well as internally. After these we should prescribe tonics and stimulants.

Linens cloths dipped in vinegar and cold water, and kept constantly applied to the back and private parts, have a powerful effect in many cases of uterine hæmorrhage. These means ought therefore always to be employed in those instances where menstruation is profuse.

Opium has been much used internally in menorrhagia; and where the patient experiences spasmodic pains in the uterus, it undoubtedly will prove a very valuable and useful medicine. On such occasions it may be given in small and frequently-repeated doses, combined either with refrigerants or astringents; but as opium possesses the power of greatly relaxing the system when used liberally, it ought not to be administered in cases of general debility, unless under the circumstance just mentioned.

Producing nausea by frequently-repeated doses of ipecacuanha, combined with opium, every two or three hours, (say three grains of the former with the fourth of a grain of the latter,) has in some cases of menorrhagia proved highly useful, the flooding having ceased the moment that nausea was induced.

The astringents most employed in this disease are, alum, catechu, gum kino, and Armenian bole, which may be given as advised below*, or as prescribed under the heads of Hæmoptysis and Abortions. The sulphate of zinc, and acetate of lead, may be substituted in cases of profuse hæmorrhage. — (See

- * 5. R Aluminis, gr. xij.
Gum. Kino, gr. viij.
Confect. Rosæ, q. s. M.
ft. Bolus, 3tia vel 4ta hora sumendus.

Adde, pro re nata,
Opii, gr. ss.

Vel,

6. R Extract. Catechu, gr. xij.
Aluminis Purif. gr. x.
Confect. Rosæ, q. s. M.
ft. Bolus.

Vel,

7. R Decoct. Cinchon. f. ʒiiss.

Aluminis, gr. xij.

Tinct. Kino, f. ʒj.

Opii, ʒ x. M.

- ft. Haustus, 4tis horis sumendus.

- * 5. Take Alum, twelve grains.
Gum Kino, eight grains.
Confection of Roses, a sufficiency
to form a bolus, which is to be
taken every third or fourth hour.
Occasionally add
Opium, half a grain.
Or,
6. Take Extract of Catechu, twelve grains.
Alum Purified, ten grains.
Confection of Roses, a sufficiency
to form a bolus.
Or,
7. Take Decoction of Peruvian Bark, one
ounce and a half.
Alum, twelve grains.
Tincture of Kino, one drachm.
Opium, fifteen drops.
Mix them, and take the draught every four
hours.

Hæmoptysis.) We may give the latter in doses of one, two, or even three grains, every three or four hours, according to the urgency of the symptoms.

In those cases where the hæmorrhage is profuse, and resists the means already recommended, it will be proper to throw up astringent injections into the uterus from time to time. Any of those here* prescribed may be used on the occasion.

Where symptoms denoting an increased action in the vessels of the uterus are observable, it would probably be right to give the digitalis, as advised under the heads of Abortions and Hæmoptysis. In a few cases of this nature I have employed it with a good effect.

Where menorrhagia proceeds from a scirrhus or ulcerated state of the uterus, all that can be done is to afford a temporary relief by administering opium in considerable doses. A combination of it with the extract of hemlock might possibly add somewhat to its palliative effect. Hyoscyamus may likewise be tried.

In those cases where menstruation becomes profuse, continues longer than ordinary, or returns more frequently than what is natural, in consequence of general laxity in the system, and not from inflammatory action, it will be proper for the patient, during its intervals, to enter on a course of tonic medicines, such as cinchona, the cortex cuspariæ, myrrh, and preparations of steel, which may be given as advised below†, or under the head of Dyspepsia.

* 8. R Decoct. Cort. Querc. f. ℥vj.
Aluminis, ʒjss. M.

ft. Injunctio.

Vel,

9. R Zinc. Sulphat. gr. xv.
Plumbi Acet. ʒj.
Aq. Distillat. Oj. M.

Vel,

10. R Aluminis, Div.
Zinc. Sulphat. gr. x.
Aq. Rosæ, ʒviij. M.

Vel,

11. R Infus. Gallæ Contus. Oj.

† 12. R Gum. Myrrh. ʒj. solve in mortario
cum

Aq. Distillat. ℥vj. et adde

— Cinnam. f. ʒj.

Potassæ Subcarbonat. ʒss.

Ferri Sulphat. ʒj.

Syrup. Simpl. f. ʒij.

ft. Mistura, in Haustus iv. distribuenda,
quorum j. sumat mane, hora quinta post
meridiem, et hora decubitus.

Vel,

13. R Decoct. Cort. Cinchonæ, f. ʒjss.

* 8. Take Decoction of Oak Bark, six ounces.
Alum, one drachm and a half.

Mix them for an injection.

Or,

9. Take Sulphate of Zinc, fifteen grains.
Acetate of Lead, one drachm.
Distilled Water, one pint.

Mix them.

Or,

10. Take Alum, four scruples.
Sulphate of Zinc, ten grains.
Rose Water, eight ounces.

Mix them.

Or,

11. Take Infusion of Oak Galls, one pint.

† 12. Take Gum Myrrh, one drachm.

Dissolve it in Distilled Water, six ounces;
and add

Cinnamon Water, one ounce.

Subcarbonate of Potass, half a
drachm.

Sulphate of Iron, one scruple.

Common Syrup, two drachms.

Mix them, and divide the whole into four
draughts, of which take one every morn-
ing, at five in the evening, and at bed-time.

Or,

13. Take Decoction of Peruvian Bark,
one ounce and a half.

To assist the effect of these remedies, she may make use of cold bathing, together with gentle horse exercise, and a generous nutritive diet with wine. Where chalybeate springs can be resorted to with convenience, a use of these waters will be likely to afford much benefit.

When, from great weakness, and relaxation in the uterine parts, the patient is troubled with a profuse menorrhagia, or with fluor albus, she will often experience great relief from Tunbridge water, or any other such chalybeate springs; and as this state of local debility is very frequently a cause of abortion or barrenness, these waters have often been the means of removing such unpleasant circumstances.

With regard, however, to hæmorrhagy from the uterus, it is often accompanied with a degree of general fever, pains in the back and loins, and local irritation, when every internal stimulant medicine would aggravate the disorder; and therefore the use of chalybeate waters in these cases requires much judgment and a proper discrimination.

To repress the too great or permanent menstruation which occurs in weak constitutions at the time of life when it ought to cease, we should have recourse to chalybeates, alum, bitters, and opium; the last of which may be administered in the dose of a grain every night, with about five grains of rhubarb.

HÆMORRHOIS, OR PILES.

THE piles consist of small tumours situated on the verge of the anus, which are sometimes separate, round, and prominent, but sometimes the tumour consists only of one tumid or varicose ring surrounding it. In some cases there is a discharge of blood from these tumours, particularly when the patient goes to stool, and then the disease is known by the name of bleeding piles; and in others there is no discharge, when it is called blind piles.

These affections may be occasioned by habitual costiveness, plethora, hard riding, excesses of various kinds, the suppression of some long accustomed evacuation, and by a use of strong aloëtic purges; and are most apt to arise in those of a robust habit, and who lead a sedentary life. Pregnant women are frequently afflicted with the piles, owing to the pressure of the uterus upon the rectum, which interrupts the return of venous blood from that part, and the costive habit to which such women are usually liable.

Tinct. Cort. Cuspariæ,
—— Card. C. aa. f. ʒj. M.

ft. Haustus, ter in die capiendus.
Adde, pro re nata,
Acid. Sulph. Dilut. ℥j.

Tincture of Angustura Bark,
Compound Tincture of Cardamons, of each one drachm.

Mix them for a draught, to be taken thrice a day, adding occasionally
Diluted Sulphuric Acid, eighteen drops.

The piles are sometimes accompanied by a sense of weight in the back, loins, and bottom of the belly, together with a pain or giddiness in the head, sickness at the stomach, and flatulency in the bowels. On going to stool, a pungent pain is felt in the fundament, and small tumours are perceived to project beyond its verge. If these break, a quantity of blood is then voided, and a considerable relief from pain is obtained; but if they continue unbroken, the patient in that case experiences great torture every time he goes to stool, and feels an inconvenience even in sitting down on any hard seat. The tumours are sometimes considerable, and from pressure upon the bladder, produce much irritation and even pain in voiding urine.

Hæmorrhoids are by no means dangerous, but they often prove both troublesome and disagreeable. In some instances they are to be regarded as a salutary evacuation. Hæmorrhoidal tumours are sometimes attended with a considerable degree of inflammation, which, proceeding to a suppuration, terminates in sinuous ulcers, or a fistula.

Dissections of piles shew that the tumours consist partly of the fine skin round the anus on the outside, and partly of the internal membrane of the gut. In general they are entire, but they sometimes have small openings in them through which the blood issues.

In the treatment of piles due attention should be paid to the cause from which they have arisen: and as costiveness is one of the most frequent, the bowels ought to be kept open and regular by medicines which will prove gently laxative*, without irritating the rectum; and as a habit may be acquired, it will be right for the patient to observe stated times in the day for endeavouring to obtain motions, but without straining. Should none be procured

- * 1. R Confect. Sennæ, ℥ij.
Pulv. Jalap. ℥ij.
Potassæ Nitrat. ʒjss.

Syr. Rhamni, q. s. M.
ft. Electuarium, de quo sumat magnitudinem
juglandis pro re nata.

Vel,

2. R Sulph. Loti, ℥j.
Confect. Sennæ, ℥ij.
Potassæ Supertart. ʒiij.

Syrup. Rosæ, q. s. M.
ft. Electuarium.

Vel,

3. R Ol. Ricini, f. ʒvj.—℥j.

Vel,

4. R Pulv. Jalapæ, ʒj.
Potassæ Supertartrat. ʒij. M.

ft. Pulv. pro dos.

1. Take Confection of Senna, two ounces.
Powdered Jalap, two drachms.
Nitrate of Potass, one drachm
and a half.

Syrup of Buckthorn, a sufficiency
to form an electuary, of which take the bulk
of a walnut occasionally.

Or,

2. Take Washed Sulphur, one ounce.
Confection of Senna, two ounces.
Supertartrate of Potass, three
drachms.

Syrup of Roses, a sufficiency to
make the whole into an electuary.

Or,

3. Take Castor Oil, six drachms to one
ounce.

Or,

4. Take Powder Jalap, one scruple.
Supertartrate of Potass, two
scruples.

This powder to be taken as a dose.

by the aid of the laxative medicines, the peristaltic motion may be excited by clysters of tepid water with soap and oil.

When the tumours are attended with much pain, and a considerable degree of inflammation, it may be advisable to apply a few leeches; after which, pledgets wetted in a solution of the acetate of lead, or sulphate of zinc, may be laid on; the patient taking care after each stool to anoint the parts with some kind of emollient ointment*. In these cases, fomentations and poultices are likewise employed; but the former are preferable, except in those cases where a suppuration has commenced. This, however, should be prevented if possible, as a fistula is sometimes the consequence thereof. Injections of cold water up the rectum have sometimes afforded great relief when even leeches and opiates have failed.

In a plethoric habit small doses of nitre may prove serviceable, particularly if mixed with sulphur. Balsam of Copaiba, given to the extent of forty or fifty drops morning and evening, often relieves the pains so frequently produced by piles.

Where the tumours are unattended by much inflammation, but are numerous and troublesome, compression is the most effectual remedy; and however large these bodies may project at stool or at other times, if the patient lies down on his back and makes a gradual but constant pressure with his fingers, they will almost always be reduced within the sphincter ani, and by a bandage properly secured with a small pad over the anus, may be prevented from prolapsing. If we cannot reduce the tumours, we must support them by a soft compress dipt in anodyne lotion, and retained by the bandage.

In a most violent case of external and internal hæmorrhoidal affection, which had resisted judicious treatment for five weeks, Dr. McLean mentions†, that almost immediate relief was obtained by giving the patient forty drops of the tinctura digitalis, and that a rapid recovery was effected by repeating thirty-five drops evening and morning. It is observed, that when he first applied

† See Medical and Physical Journal, vol. iv. p. 134.

- * 5. R Unguent. Cetacei, ℥ij.
Opīi, ʒj. M.

ft. Unguentum.

Vel,

6. R Cerati Plumbi Acetatis, ℥ij.

Opīi, ʒj. M.

Vel,

7. R Unguent. Cetacei,
—— Plumbi Acetatis, āā ʒss.

Pulv. Opīi, ʒss. M.

- * 5. Take Spermaceti Ointment, two ounces.
Opium, reduced to powder, one drachm.

Mix them well, and use the ointment.

Or,

6. Take Cerate of Acetate of Lead, two ounces.

Opium, two drachms.

Mix them.

Or.

7. Take Spermaceti Ointment,
Cerate of Acetate of Lead, of each half an ounce.

Opium in powder, half a drachm.

Mix them.

for advice, his countenance was pale and sallow, his strength and flesh much exhausted, he walked with extreme pain and difficulty, his pulse was quick and small, and his appetite impaired: in a week the contrast was very striking.

If a prolapsus ani attends the piles, the part is carefully to be replaced each time after going to stool, by laying the patient in a horizontal posture, and pressing gently with the fingers till the reduction is effected. Its return is to be prevented by avoiding the occasional causes as much as possible; and where it proceeds from a laxity of the rectum, besides applying a proper bandage, we may employ astringents both internally, as advised under the heads of the preceding hæmorrhages, and also externally. Pledgets dipped in a strong decoction of galls, or oak bark, may be kept constantly to the parts as an external astringent, and they may be anointed from time to time with an ointment* possessing similar virtues. As a general tonic, cold bathing may be employed with advantage.

It has been noticed that hæmorrhoids are to be regarded in some instances as a salutary evacuation. In all such, therefore, the hæmorrhage should not be stopped, but moderated.

In those cases where it is so profuse as to occasion great loss of strength, we must have recourse to astringents both internally and externally, as has just been advised, taking care to obviate costiveness by some gentle laxative. Confinement to a horizontal posture with the most perfect quietude, will be advisable in such cases. If the patient can lie on his face, so much the better. He should be lodged in an airy chamber, and his bed be lightly covered.

When the hæmorrhage has been very considerable, good effects have been derived from the early application of pressure, made by introducing up the rectum a piece of sheep's or pig's gut tied at one end, and by filling it at the other extremity with any cold liquid, such as vinegar and water, forcing up the liquid so as to increase the degree of pressure, and then securing it with a proper bandage.

When the hæmorrhage proceeds from tumours seated high up, and is so severe as to induce great debility, we may throw up cold water in such a small quantity as just to fill the rectum, or some

* 8. R Adipis Præparat. ℥j.
Pulv. Gallarum, ʒij.

Opii, ʒj. M.
ft. Unguentum.

Vel,

9. R Cerat. Plumbi Acetatis, ʒj.

Pulv. Gallar. ʒij. M.

* 8. Take Prepared Lard, one ounce.

Oak Gall, in fine powder, two drachms.

Opium, one drachm.

Mix them.

Or,

9. Take Cerate of Acetate of Lead, one ounce.

Oak Gall, in powder, two drachms.

Mix them.

astringent injection*, if it cannot be moderated by the means just recommended.

In those cases where the discharge has become habitual, arising from plethora, this state of fulness must be prevented by moderate exercise on foot or in a carriage, by the use of a spare diet, by taking cooling purgatives from time to time, and by carefully avoiding all strong liquors.

An internal use of Harrogate water is a remedy from which great benefit is derived in the piles. The advantages of sulphur, as a mild unirritating purgative, and one which seems to continue its operation through the whole of the intestinal tube, has long established its virtue in those hæmorrhoidal affections that require this evacuation; and the neutral salts, with which it is united in this mineral water, cannot but contribute to its efficacy.

Those who are afflicted with piles should shun all such causes as may either increase the determination of blood into the hæmorrhoidal vessels, or prevent its return back from them, but more particularly riding on horseback.

During the continuance of this complaint the diet should be cool and nutritious, consisting principally of vegetables, ripe fruit, jellies, broths, &c. Fermented and spirituous liquors will be hurtful, and therefore the patient should only drink cooling acidulated liquors, water, or toast and water.

Where piles have been of long standing, the intestinal varicose tumours or hæmorrhoidal excrescences sometimes become so troublesome as to render their extirpation necessary either by ligature or excision. Under certain and prudent limitations, the latter has been strongly recommended by Mr. Ware†; and by Sir James Earle‡ their removal has been powerfully urged; but very serious consequences have, however, now and then resulted from both modes. Their removal by the knife appears far preferable to doing it with ligatures, as peritoneal inflammation, convulsions, suppression of urine, and even tetanus, have ensued from the latter mode of treatment.

† See his Remarks on Fistula Lachrymalis, with Observations on Hæmorrhoids.

‡ See Observations on the Hæmorrhoidal Excrescence.—Pott's Works, by Sir James Earle, vol. iii.

* 10. R Cort. Querc. Contus. ʒj.
Aq. Fontan. Oij.
Coque ad Oj. Colaturæ adde
Aluminis, ʒij.
Tinct. Opii, f. ʒj. M.
ft. Injectio.

Vel,

11. R Zinc. Sulphat. ʒj.
Aq. Rosæ, Oj. M.

Vel,

12. R Gallæ Contus. ʒss.
Aq. Fervent. Oij. Col.

* 10. Take Decoction of Oak Bark, one pint.

Alum, two drachms.

Tincture of Opium, one drachm.

Mix them for an injection.

Or,

11. Take Sulphate of Zinc, one drachm.

Rose Water, one pint.

Mix them.

Or,

12. Take Bruised Oak Galls, half an ounce.

Hot Water, two pints.

Infuse them, and strain off the liquor.

Fistula in Ano.

Is a disease which is a disease very troublesome and difficult to treat. After the operation is performed it will be long in healing. The sphincter ani is the source of the difficulty, for every time the patient has an evacuation the sphincter separates one side of the abscess from the other and thus the adhesive process is interrupted. The principle of treatment is to divide the sphincter ani.

Fistula in ano is more painful than a common abscess. excruciating pains in the evacuation of his feces, dreadful *tenismus*, often retention of urine, from the matter pressing on the urethra.

The Medical treatment of *Fistula in ano* will depend on their causes. Costiveness, disease of the liver, long continued diarrhoea irritating the mucous membrane, little exercise, high living, derangement of the alimentary canal, producing an accumulation of blood in the mesenteric vessels cause a congestion which is determined to the anus.

could be allayed in peculiar constitutions to produce this disease. The sores after the operation are often very indolent and the greatest care must be paid not to irritate them by too frequent dressing

see Surgery
next

If the disease is recent, it may sometimes be relieved by milder means, such as the introduction of a large-sized bougie up the rectum. Where the radical operation is not thought advisable, or there may be any other objection to its performance, we ought to make trial of the bougie, as it has been found* very considerably to relieve strictures in the rectum and such like inconveniences produced by hæmorrhoidal excrescences.

When in consequence of piles, the rectum becomes so much affected as to threaten the patient with a fistula, we may recommend a use of Dr. Ward's celebrated paste†, as inserted in the Pharmacopœia Chirurgica, which is to be prepared in the following manner:—The first three ingredients are to be finely powdered and well mixed: after which, the honey and sugar melted together over the fire, and formed into a clear syrup, are to be added, and the whole beaten together into a mass.

ORDER V.

PROFLUVIA, OR FLUXES, WITH PYREXIA.

PYREXIA, with an increased excretion, not naturally bloody, constitutes this order of diseases.

CATARRHUS, OR CATARRH.

A CATARRH consists in an increased excretion of mucus from the membrane of the nose, throat, and bronchiæ, accompanied with a slight degree of fever, and other symptoms usually attendant thereon.

It attacks persons of all ages and constitutions, but more particularly the young, and those who have had any former affection of the lungs; and it may take place at any time of the year when there are sudden changes of the weather from heat to cold, and *vice versâ*. In the former instance, the application of cold to the

* See Observations on the Diseases of the Rectum and Anus, by T. Copeland.

† 13. R Rad. Enul. Campan. Pulv.
Piperis Nigri singul. ℥ss.

Seminum Fœnicul. Pulv. ℥jss.

Mellis Dispumati,
Sacchar. Purificat. singul. ℥j. M.

ft. Pasta, de qua capiat quantitatem nucis
moshatæ bis terve de die.

† 13. Take Elecampane Root, in powder,
Black Pepper, of each half a
pound.
Fennel Seed, powdered, one
pound and a half.
Clarified Honey,
White Sugar, of each one
pound.

Make them into a paste, of which let the bulk
of a nutmeg be taken twice or thrice daily.

body seems evidently to be the remote cause of the disease ; and in the latter it appears to depend on a specific contagion, having, in the years 1732 and 1733, spread in a progressive manner over the whole of Europe, and part of America, and in 1785 and 1803, over the whole of Britain. When the disease has prevailed epidemically in this manner, the term of influenza has been applied to it.

The proximate or immediate cause of the catarrh, seems to be an increased afflux of fluids to the mucous membrane of the nose, fauces, and bronchia, in consequence of some degree of inflammation in these parts.

Catarrh is to be distinguished from the measles by the great mildness of the febrile symptoms, and by the absence of many of the symptoms accompanying the latter.

The disease usually comes on with a dull pain, or sense of weight in the forehead, a redness of the eyes, and a fulness and heat in the nostrils ; which symptoms are soon followed by the distillation of a thin acrid fluid from these parts, together with a soreness in the trachea, hoarseness, frequent sneezing, some difficulty of breathing, a dry cough, loss of appetite, general lassitude over the whole body, and chilliness ; towards evening the pulse becomes considerably quickened, and a slight degree of fever arises.

In the progress of the disorder the cough is attended with an excretion of mucus, which at first is thin, white, and expectorated with some difficulty ; but becoming gradually thicker and of a yellow colour, is at length brought up with greater ease and less coughing.

Even where there is not much affection of the system, it often happens that the natural evening paroxysm is considerably increased ; and, from restlessness and frequent coughing, the patient is prevented from sleeping till the morning, at which time a crisis takes place for the present, and he then remains tolerably easy until the return of the evening paroxysm.

When the secretion of mucus ceases, the inflammation goes off also, so that a natural cure almost always arises in the disease.

Catarrh is seldom attended with fatal consequences, except when it either arises in elderly persons, attacks those of a consumptive habit, or has been much aggravated by some fresh application of cold, or by improper treatment ; and it usually terminates in the course of a few days, if not neglected, either by an increased expectoration, or a spontaneous sweat. In some instances it however lays the foundation of phthisis pulmonalis, or gives a tendency to asthma and hydrothorax. In others it becomes habitual, and is accompanied by severe dyspnœa, particularly in the winter : such patients often suffer fatally from the accession of a sharp frost ; their usual complaint immediately attacks them, and passes on to the peripneumonia notha on the one hand, in which they are suffocated by the profuse effusion of

viscid phlegm into the air-cells and tubes; or, on the other, it puts on the more active form of common peripneumony. Very old persons are apt to be carried off by comparatively moderate attacks of catarrh, which seemed to wear out their feeble portion of vitality merely by the slight interruption to the function of respiration, which the phlegm secreted in the bronchial passages occasioned; and they quietly sink into the sleep of death, without any urgent symptom or appearance of distress.

The inner membrane of the trachea usually appears on dissection, in fatal cases of catarrh, to be much inflamed, and its cavity to be filled with a considerable quantity of mucous fluid. The same morbid state is likewise communicated to the lungs, which seem loaded with matter of a similar nature, producing suffocation.

In mild attacks of this disease it may not be necessary to have recourse to the aid of medicine. In general it will be sufficient to confine the patient to bed, and to make him use an abstemious regimen, and drink plentifully of warm diluent mucilaginous liquors, such as barley-water, thin gruel, &c., acidulated with a small quantity of lemon-juice, or crystals of tartar; but in violent attacks, where there is a great difficulty of breathing, much febrile heat, and a full, frequent pulse, it will be necessary, besides adopting these means, to guard against the effects of general inflammation, by employing various remedies.

In those cases, therefore, where there is much general affection of the system, and the inflammatory diathesis is great, we should have recourse to the lancet, and other antiphlogistic remedies, proportioning the quantity of blood which we draw off to the violence of the symptoms and the age of the patient.

If the difficulty of breathing and oppression at the chest are not soon relieved by venesection, local blood-letting will be advisable, after which it will be proper to apply a blister over the part affected; which application will seldom fail to afford relief, if employed early in the disease.

To encourage a determination to the surface of the body, and promote expectoration, it will be necessary to administer small and frequently-repeated doses of antimonials, as advised under the head of Simple Continued Fever, or other diaphoretics, as prescribed below*; the effect of which may be assisted by making

* 1. R Succ. Limon. f. ℥jss.

Ammon. Subcarbonat. ℥ss.

Aq. Fontan. f. ℥v.

Antimon. Tartarizat. gr. jss.

Syrup. Tolutan. f. ℥ss. M.

℞. Mistura, cujas sumat cochil. larg. ij. tertiis horis.

* 1. Take Juice of Lemon, one ounce and a half.

Subcarbonate of Ammonia, half a drachm.

Pure Water, five ounces.

Tartarized Antimony, one grain and a half.

Syrup of Tolu, half an ounce.

Of this mixture two large spoonsful are to be taken every three hours.

the patient drink plentifully of mucilaginous diluent liquors acidulated, and confining him to bed.

Ammonia is a very powerful diaphoretic, and particularly if administered in wine-whey. Twenty or thirty drops of liquor vol. corn. cervi, in half a pint of wine-whey, if the patient is kept in a moderately warm bed, will soon elicit a profuse sweat. Neutral salts promote insensible perspiration, when the skin is not warmed much externally. When these are sufficiently diluted with water, and given, a copious perspiration is procured. Half an ounce of vinegar saturated with ammonia (as in the liquor ammon. acetatis), and taken every two or three hours, will answer this purpose very well.

Nitre is a medicine which is often given in this disease, as well as in gonorrhœa. In the latter, it will be sure to augment the pain by its stimulus on the excoriated or inflamed urethra; and in the former, where the discharge is too thin or saline, it cannot fail to increase the coughing.

The secretion of mucus in the lungs and fauces may likewise be assisted by administering pectorals of the attenuating class, such as squills, gum ammoniac, &c. *, and by applying to them repeatedly, throughout the course of the day, the steams arising from warm vinegar and water, by means of Dr. Mudge's inhaler; the spout of a large teapot, or a funnel inverted over a bason.

When the cough is troublesome, and there is great soreness and rawness in the fauces, demulcents† may be used with advantage;

Vel,
2. R Liquor. Ammon. Acetat. f. ℥ss.

Mistur. Camphoræ, f. ℥j.
Vini Antimon. Tartarizat. ℥ xii.

Syr. Althææ, 3ij. M.

ft. Haustus, quartis horis adhibendus.

Vel,
3. R Camphoræ, gr. iv.
Pulv. Antimon. gr. ij.
Confect. Rosæ, q. s. M.
ft. Bolus.

* 4. R Misturæ Ammon. f. ℥vss. M.

Oxymel. Scillæ, f. ℥ss.
ft. Mistura, ejus sumat cochl. media ij.
subinde vel tusse urgenti.

† 5. R Mucilag. Gum. Acaciæ, f. ℥v.

Ol. Amygdal. D. f. ℥j.
Syrap. Tolutan. f. ℥ss.
Liquor. Ammon. Subcarbonat. f. ℥ss.
M.
ft. Emulsio, ejus sæpe sumat cochl. larg. j.

Or,
2. Take Solution of Acetate of Ammonia,
half an ounce.
Camphorated Mixture, one ounce.
Wine of Tartarized Antimony,
eighteen drops.
Syrup of Marshmallow, two
drachms.

Mix them as a draught, to be given every
four hours.

Or,
3. Take Camphor, four grains.
Antimonial Powder, two grains.
Confection of Roses, a sufficiency
to form a bolus, which may be taken as
frequently as the former.

* 4. Take Mixture of Ammoniac, five ounces
and a half.

Oxymel of Squill, half an ounce.
Of this mixture two desert spoonsful may be
taken now and then, or when the cough
is troublesome.

† 5. Take Mucilage of Gum Acacia, five
ounces.

Oil of Sweet Almonds, one ounce.
Syrup of Tolu, half an ounce.
Solution of the Subcarbonate of
Ammonia, half a drachm.

Mix them, and of this emulsion the patient
may take a large spoonful frequently.

and after the inflammatory symptoms have abated, opiates will afford effectual relief, and may be joined with the former. Where the patient's rest is particularly disturbed in the night, an opiate* at bed-time will be highly necessary, but it should be combined always with some diaphoretic.

If costiveness prevails in the course of the disease, it ought to be removed by gentle laxatives.

When the mucous membrane of the nose is much affected, it may be smeared from time to time with a little tallow, or spermaceti ointment.

The diet of the patient should be cooling and spare, as water-gruel, chicken-broth, beef-tea, vegetables, &c.

Such is the treatment which should be adopted during the first stage of the disease; but it often happens that, after the inflammatory symptoms have subsided, a weakness remains, and there is an increased secretion from the lungs, which perhaps continues for many months, without the least appearance of purulence. In such cases, the patient is carefully to avoid all fresh exposures to cold, and he should defend himself by going warmly clothed.

Where the disease runs on for any length of time, or has become habitual, the patient should continue long in bed in the morning, so that the natural evening paroxysm of fever may be entirely carried off there, and he should go early to bed at night. He is likewise to abstain from wine, and all food which is hard of digestion; to breathe as pure open air as possible; and to use gentle

Vel,

6. R Cetacei, ʒiss.

Vitellum Ovi unius. Misceantur
bene in mortario, et adde

Syrup. Tolutan. f. ʒss.

Aq. Distillat.

— Pulegii, aa f. ʒiij. M.

ft. Mistura, cujus capiat æger cochleare
magnum frequenter.

Vel,

7. R Mel. Optim.

Ol. Amygd. D. aa f. ʒij.

Suc. Limon. f. ʒj.

Syrup. Tolutan. f. ʒij. M.

ft. Linctus, de quo sæpe lambat æger.

* 8. R Liquor. Ammon. Acetat. f. ʒiij.

Mucilag. Gum. Acaciæ, f. ʒj.

Syrup. Tolutan. f. ʒj.

Tinct. Opii, ℥xxvi. M.

ft. Haustus, hora decubitûs sumendus.

Vel,

9. R Pulv. Ipecac. Comp. gr. xij.

ft. Pulvis sudorificus.

Or,

6. Take Spermaceti, one drachm and a half.

The Yolk of an Egg. Mix them
well together in a mortar, then
add

Syrup of Tolu, half an ounce.

Distilled Water,

Pennyroyal Water, of each three
ounces.

Shake them together, and let the patient
take a large spoonful frequently.

Or,

7. Take Clarified Honey,

Oil of Sweet Almonds, of each
two ounces.

Lemon Juice, one ounce.

Syrup of Tolu, two drachms.

Mix them, and of this linctus let the patient
take a little often.

* 8. Take Solution of Acetate of Ammonia,
three drachms.

Mucilage of Gum Acacia, one
ounce.

Syrup of Tolu, one drachm.

Tincture of Opium, forty drops.

Mix them for a draught, to be taken on
going to bed.

Or,

9. Take Compound Powder of Ipeca-
cuanha, twelve grains.

exercise daily on horseback : which will take off the blood from the interior parts, and thereby diminish the internal secretions.

Much benefit has been derived in some cases of chronic catarrh by using a warm bath, but particularly the vapour-bath, as by the latter we have the power of introducing into the chest soothing or stimulant vapours, which act immediately on the seat of the disease. When the secretion from the chest is greatly lessened, and debility alone remains, we may alternate the vapour-bath with the cold one, using the latter twice a week, and the vapour-bath once.

By paying a proper attention to the means which have been advised, by keeping up a constant inflammation on the breast by plasters of Burgundy pitch, or *pix abietina*, and blisters, and by employing opiates to mitigate the cough, and tonics, we shall in general be able to remove all consequences of the disease.

If, notwithstanding these means, the cough should be dry, or be unattended with proper expectoration, and, together with a soreness, produce shooting pains through the breast and between the shoulders, accompanied with difficulty of breathing, flushing in the cheeks after meals, a burning sensation in the hands and feet, and other symptoms of hectic fever, no time should be lost, as there is reason to fear that tubercular suppurations will follow. Under such circumstances, the steps advised in the treatment of phthisis pulmonalis ought immediately to be adopted.

It is necessary here to notice a species of catarrh, with which persons advanced in life, and who have had frequent attacks of such affections, are apt to be afflicted. They are seized with a cough, which at length becomes habitual and chronic, and continues for many years, proving extremely distressing. Its attacks are most common early in the morning, and the ill-fated patient, otherwise in good health, is thrown into fits of coughing, which last a long time, and are only terminated by a free expectoration taking place, when relief is immediately obtained. Next morning, however, the same distressing symptoms again seize the enfeebled patient, and thus the little strength he may have to support him through the fatigues of the day is nearly exhausted. In northern climates in particular, this species of catarrhal affection is very frequently to be met with among elderly people ; and it seems to arise from an unusual quantity of mucus secreted in the bronchiæ, and perhaps in the lungs themselves, which by impeding respiration, or mechanically irritating these parts, produces the cough. When the complaint is protracted, or occurs in aged people who are much exhausted, the expectoration possibly ceases, while at the same time the bronchial secretion goes on, the skin is cold, the pulse is small and fluttering, the patient becomes drowsy, the face is tumid and discoloured, the lips livid, and the breathing is more and more difficult, till at last the bronchiæ are so replete with mucus, that the admission of a sufficient quantity of air to support life becomes impossible, and suffocation ensues : as happened in a

late instance which came under my care. A combination * of squill and gum ammoniac will be proper in this species of catarrh. Tonics appear likewise advisable, and therefore we may recommend the sulphate of iron, with subcarbonate of potass and myrrh, as noticed under the head of Phthisis. Opium, by checking the expectoration, might prove prejudicial. Digitalis† will be very likely to produce much benefit also in chronic coughs accompanied with dyspnœa, great secretion of viscid phlegm, and any tendency to effusion into the cells of the lungs.

The catarrhal fever known by the name of influenza, which prevailed so universally in most parts of this kingdom in 1803, as well as in France, where it was called *la gripe*, first shewed itself in London towards the latter end of the month of February, when a damp and mild state of the atmosphere had succeeded to severe cold, and when this again had been followed towards the beginning of March by frost and keen easterly winds.

Like preceding epidemics of the same kind, this disease exhibited various degrees of morbid affection, having been in some instances so slight as not to incapacitate persons from following their ordinary occupations and pursuits, and scarcely to require the aid of medicine; while in others the attack was of so severe a nature as to endanger life, and even to destroy it. To young children and elderly people it proved very fatal indeed, but more particularly so to the latter. Those likewise of a middle age, who either laboured under habitual asthma, or had any predisposition to phthisis, experienced its dire effect.

* 10. R Pulv. Gum. Myrrh. ʒj.

Gum. Ammoniac. ʒss.

Scillæ Pulv. gr. x.

Syrup. Tolutan. q. s. M.

ft. Massa in pilulas gr. v. dividenda. Capiat
ij. pro dos. omni mane et nocte.

Vel,

11. R Gum. Myrrh. ʒss. Solve in

Aq. Puræ, ʒj. et adde

Mistur. Ammoniac. ʒv.

Oxymel. Scillæ, ʒss.

Tinct. Camphoræ Compos. ʒij. M.

Capiat cochl. amplum pro dos. bis terve in
die.

† 12. R Misturæ Ammoniac. f. ʒvss.

Oxymel. Scillæ, f. ʒss.

Tinct. Digitalis, ℥ xxv. M.

Sumat cochl. amplum subinde, vel tusse aut
dyspnœa urgenti.

* 10. Take Gum Myrrh in powder one
drachm.

— Ammoniac, half a drachm.

Powdered Squill, ten grains.

Syrup of Tolu, a sufficiency to
form the mass, which is to be divided
into pills of five grains each, and two to
be taken morning and night.

Or,

11. Dissolve Myrrh, half a drachm in

Pure Water, one ounce; then add

Mixture of Ammoniac, five
ounces.

Oxymel of Squill, half an ounce.

Compound Tincture of Cam-
phor, two drachms.

Mix them, and take a large spoonful twice
or thrice a day.

† 12. Take Mixture of Ammoniac, five ounces
and a half.

Oxymel of Squill, half an ounce.

Tincture of Foxglove, forty
drops.

Mix them, and let a large spoonful be
taken from time to time, when either
the cough or shortness of breath is
troublesome.

It was generally preceded by chilliness and shiverings, which were succeeded by some degree of heat, pains in the head, a discharge from the eyes and nostrils, severe sneezing, hoarseness, and cough. In the course of a few hours the headach became much increased, as well as the heat; the pulse was quickened, but small; the breathing was difficult and oppressed, or transitory stitches across the chest were felt. Some patients complained of pains in the shoulders and limbs, very much resembling chronic rheumatism, and there were instances in which the difficulty of breathing might be, in part, attributed to a similar affection of the intercostal muscles. The tongue was usually white; the thirst considerable; the bowels were costive; the urine was high-coloured and clear; and very frequently there was nausea at the stomach, with more or less of vomiting.

Towards the second or third night the cough became greatly aggravated, and was strong and almost incessant, being usually accompanied, even on its first coming on, with an expectoration of thin sharp mucus. The evening paroxysm of fever was likewise more severe, being attended with extreme anxiety and restlessness, as well as considerable heat, and often with a great confusion in the head, and rambling. At this stage of the disease the pulse was usually from 100 to 120 strokes in a minute. Towards the morning there was commonly a remission of the febrile symptoms, but the cough continued urgent, and greatly interfered with the patient's getting any sleep after this time.

Where gentle perspirations came on early, and the bowels were kept open, the fever usually declined about the fifth or sixth day, and the urine, which before was high-coloured and clear, now became turbid, or deposited a copious sediment; but the cough continued for many days, the sputum being however of a milder quality and thicker consistence, and the expectoration more free. Depression of spirits, languor, and debility, which were universal attendants on this epidemic, together with restless nights, harassed the patients for a considerable length of time after the decline of the fever.

Such was the common form of the disease, but its modifications were extremely numerous; for in some instances there was a violent headach with a swelling of the eyes, or inflammation of the conjunctiva, or pains in the limbs, with but little catarrhal affection; in others, the throat was principally affected; and in others again, a peripneumonic condition existed. In a few instances the fever assumed the typhoid type.

In the treatment of the influenza, bleeding was not much employed, and it was only had recourse to in those cases where the symptoms of pneumonia were very urgent, and the patient complained of great difficulty of breathing or an acute pain in the side. Where dyspnœa prevailed, the application of a blister to the chest usually afforded considerable relief.

If nausea was complained of at the commencement, a gentle emetic proved serviceable; and where costiveness existed, as was usually the case, it was necessary to give some gentle laxative.

When there was no great degree of heat or fever present, it was by no means requisite to keep patients in bed: in such cases, confinement to their chamber, with plentiful dilution, and a spare regimen, were sufficient; but when the febrile symptoms ran high, it was necessary to keep them in bed, and to administer diaphoretics. Small doses of the pulvis antimonialis, assisted by a solution of some neutralized salt, and given every three or four hours, seldom failed to excite a gentle determination to the surface of the body. Further than this was not proper; for immoderate sweating, and particularly at the decline of the disease, was sure to prove injurious, by adding to the languor and debility.

Some advantages were derived from a free use of the compound decoction of barley, and solutions of gum. acaciæ, with the addition of a little syrup of lemons, in those cases where the fauces and throat were affected by rawness and soreness. Towards the decline of the disease, where the expectoration was both viscid and difficult, squills were employed with benefit. Where the cough proved very troublesome, and the febrile symptoms had subsided, an anodyne at night had a very good effect.

To counteract the languor and debility which invariably attended this epidemic, it was necessary, during a state of convalescence, to have recourse to tonics; such as a decoction of the bark of cinchona, with the mineral acids; or some preparation of myrrh, with an infusion either of calumba root or gentian, various formulæ of which are inserted under the head of Dyspepsia.

At the commencement of the disease, a spare, mild, and vegetable diet was most advisable; but at its decline, a generous one, with a moderate quantity of wine, was proper.

Many persons seemed to have relapses, and therefore it was found necessary to guard carefully against any fresh exposure to cold. In many instances the period of convalescence was much protracted; and during the debility which prevailed in consequence of it, patients were liable to the attack of some chronic disorder that proved obstinate and tedious, but more particularly to chronic rheumatism.

By some physicians the disease was supposed to be contagious; by others not so: indeed its wide and rapid spread made many suspect some more generally prevailing cause in the atmosphere, as alone capable of accounting for its extensive and speedy diffusion. It arose probably at first from a peculiar state of the atmosphere, like other epidemics, and was afterwards kept up and propagated by contagion.

DYSENTERIA, OR DYSENTERY.

THE dysentery is a disease in which there is an inflammation of the mucous membrane of the intestines, accompanied with frequent stools, severe griping pains, tenesmus, and some degree of fever; the stools, although frequent, being small in quantity, and without any natural fæces intermixed, but consisting principally of mucus, which is sometimes streaked with blood. When the natural fæces do appear, they are usually under the form of small, compact, hard substances, known by the name of scybala.

In the medical schools of Europe, it has been taught that dysentery is of a highly contagious nature, and it undoubtedly is so where the sick are over-accumulated, and cleanliness and ventilation are not properly attended to; but it seems probable that the disease itself, under all ordinary circumstances of accommodation, is not of an infectious nature. It is reasonable to conclude that dysentery has rarely assumed an infectious character until it has prevailed for some time, and attacked a considerable number of persons: that is, not until the atmosphere has become charged with miasms emanating from the bodies of the sick, and their evacuations.

Dysentery occurs chiefly in the autumn, and is often occasioned by cold or moisture succeeding quickly to intense heat or great drought, whereby the perspiration is suddenly checked, and a determination made to the intestines. It is likewise occasioned by a use of unwholesome and putrid food, and by noxious exhalations and vapours: hence it appears often in armies encamped in the neighbourhood of low marshy grounds, spreads rapidly, and proves highly destructive, particularly where there is an undue accumulation of sick, and a neglect of cleanliness and due ventilation. From the same causes it occurs frequently on board ships of war, and vessels transporting slaves from the coast of Africa,—proving equally fatal. The free use of fruits has been assigned as one of the causes productive of the disease in warm climates; but very erroneously, for they have quite the opposite effect, and tend to preserve those from it who partake freely of them when perfectly ripe. A particular disposition in the atmosphere seems often to predispose or give rise to the dysentery, in which case it prevails epidemically.

It frequently occurs about the same time with autumnal intermittent and remittent fevers, and with these it is often complicated. It is likewise frequently combined with typhus. A late writer* supports the proposition that the simple dysentery is of itself never contagious, nor the intermittent and remittent forms of the disease; that the combination with typhus is alone possessed of that property; and this, he insists, originates not in the

* See Observations on Simple Dysentery and its Combinations, by William Harty, M.D.

virus specific to the dysentery, but in the contagion of fever. Others have, however, given it as their opinion, that the contagion arises from the effluvia of the fæces of dysenteric patients, and not from their febrile perspiration or breath.

The dysentery is much more prevalent in warm climates than in cold ones; and in the months of August, September, and October, which is the rainy season of the year in the West Indies, it is apt to break out, and to become very general among the negroes on the different plantations in the colonies. It likewise prevails much in the unhealthy parts of the East Indies, and in our factories on the coast of Africa, both during the wet season and some time after it. The body having been rendered irritable by the great heat of the summer months, and being exposed suddenly to cold or moisture with open pores, the blood is thereby thrown from the exterior vessels upon the interior, so as to give rise to dysenteries.

The dysentery of tropical climates is usually found connected in some way or other with derangement of the liver; but whether the one is a cause or a consequence of the other, observation has not accurately determined; for sometimes hepatitis precedes the rise of Indian dysentery, at other times it follows in succession, and in some instances there are evident symptoms of both diseases existing from the commencement to the termination of the case.

Dysentery may readily be distinguished from diarrhœa by the absence of fever and tenesmus in the latter: the appearance of the stools, and the other symptoms, will further assist us.

An attack of dysentery is sometimes preceded by loss of appetite, costiveness, flatulency, sickness at the stomach, and a slight vomiting; and comes on with chills succeeded by heat in the skin, and frequency of the pulse. These symptoms are in general the forerunners of the griping and increased propensity to stool which afterwards occur; but it sometimes happens that the local affection is perceived first.

When the inflammation begins to occupy the lower part of the intestinal tube, the stools become more frequent and less abundant; and in passing through the inflamed parts they occasion great pain, so that every evacuation is preceded by a severe griping, as also a rumbling noise, and there is unusual flatulence in the bowels.

The motions vary both in colour and consistence, being sometimes composed of frothy mucus streaked with blood, and at other times of an acrid watery humour, like the washings of meat, and of a very fetid smell. Sometimes pure blood is voided; now and then lumps of coagulated mucus, resembling bits of cheese, are to be observed in the evacuations, and in some instances a quantity of purulent matter is passed.

Sometimes what is voided consists merely of mucous matter,

without any appearance of blood, exhibiting that disease which is known by the name of dysenteria alba, or morbus mucosus.

While the stools consist of these various matters, and are voided frequently, it is seldom that we can perceive any natural fæces among them, and when we do, they appear in small hard balls, called scybala, which being passed, the patient is sure to experience some temporary relief from the griping and tenesmus.

It frequently happens, from the violent efforts which are made to discharge the irritating matters, that a portion of the gut is forced beyond the verge of the anus, which in the progress of the disease proves a troublesome and distressing symptom, as does likewise the tenesmus, there being a constant inclination to go to stool, without the ability of voiding any thing, except perhaps a little vitiated mucus, or a small quantity of blood.

More or less of pyrexia usually attends with the symptoms which have been described, throughout the whole course of the disease, where it is inclined to terminate fatally, and is either of an inflammatory or putrid tendency. In the other case the febrile state wholly disappears after a time, while the proper dysenteric symptoms probably will be of long continuance.

When the symptoms run high, and are accompanied with violent irritation of the whole intestinal tube, great prostration of strength, strangury, and hiccup, or with a putrid tendency, and fetid and involuntary discharges, the disease often terminates fatally in the course of a few days: but when they are more moderate, it is frequently protracted to a considerable length of time, and induces great emaciation and debility, but goes off at last by a gentle perspiration diffused over the whole body; the fever, thirst, and griping then ceasing, and the stools becoming of a natural colour and consistence. When the disease is of long standing, and has become habitual, it seldom admits of an easy cure; and when it attacks a person labouring under an advanced stage of scurvy or pulmonary consumption, or whose constitution has been much impaired by any other disorder, it is sure to prove fatal. It sometimes appears at the same time with autumnal intermittent and remittent fevers, as has before been observed, and is then more complicated and difficult to remove.

A great degree of tenesmus, severe griping pains, frequent inclination to go to stool and but little voided, much depression of strength, fætor of the evacuations, a tense abdomen, violent pyrexia, cold clammy sweats, coldness of the extremities, aphthæ, hiccup, petechiæ, and a weak irregular pulse, are to be regarded as very unfavourable symptoms. Whereas a gentle and universal diaphoresis, moderate pyrexia, the evacuations becoming less frequent and more of a natural consistence, and a gradual diminution of the griping and tenesmus, are favourable appearances. The disease is very liable to a relapse from any exposure to cold, wet, or fatigue.

Upon opening the bodies of those who die of dysentery, the internal coat of the intestines (but more particularly of the colon and rectum) appears to be affected with inflammation and its consequences, such as ulceration, erosions, contractions, scirrhusities, and gangrene. The peritonæum and other coverings of the abdomen, in many instances, have likewise an inflammatory appearance.

Two different stages seem evidently to exist in the course of this disease; wherefore, to treat it properly, due attention should be paid to that which is present at the time when advice is applied for. An important point to be attended to is, not to neglect it at its commencement.

In its first stage, if the patient is young and plethoric, and the disease is accompanied by acute inflammation of the villous coat of the intestines, and a considerable congestion of blood, or inflammation of the liver, as is sometimes the case in warm climates, early blood-letting may be requisite. It will also be proper, where an inflammatory state of the intestines appears to be the cause of dysentery, and besides the tormina and tenesmus, there is a considerable discharge of blood with the stools; which consist of little else than that and mucus; but otherwise venesection will not be necessary, particularly as the fever which accompanies dysentery is very apt in the course of the disease to assume a typhoid type.

It has been a matter of doubt with some physicians whether to consider the inflammation that attends on dysentery as the consequence or cause of the disease. My own opinion is certainly in favour of the latter; but nevertheless, I do not recommend an indiscriminate use of the lancet, but, on the contrary, a very cautious one.

In most cases, we may begin the cure by giving a gentle emetic in the evening, and the next morning we may administer castor oil or some saline purgative, which should be repeated every second or third day, in order to procure an evacuation of natural fæces, which seldom pass off in any quantity, unless by artificial means.

As a complete cure in dysentery can only be effected by a full and free discharge of purulent matter from the intestines, and this kept up throughout the whole period of the disease, a frequent repetition of such medicines as will effectually promote the end in view must be assiduously attended to.

Should those which are prescribed below* not procure copious

- * 1. R Sodæ Sulphat. ʒvi.
Mannæ Optim. ʒss.
Aq. Fervent. f. ʒiiss.

Tinct. Sennæ C. ʒij. M.

ft. Haustus.

Vel,

2. R Ol. Ricini, f. ʒj, pro dos.

- * 1. Take Sulphate of Soda, six drachms.
Manna, half an ounce.
Warm Water, one ounce and a half.
Compound Tincture of Senna, two drachms.

Mix them as a purgative draught.

Or,

2. Take Castor Oil, one ounce for a dose.

stools, we must then employ stronger purgatives*. Some practitioners are in the habit of combining emetic and purgative medicines, such as some of the mild neutral salts, with tartarized antimony†, and often with a very good effect.

With the view of determining the circulation to the surface of the body, small doses of some diaphoretic‡ may be taken every three or four hours, after proper evacuations, so as to produce and keep up a gentle perspiration without exciting much nausea. A warm bath, assisted by diluents and warm covering, may prove good auxiliaries. By these means we may be able sometimes to cut the disease abruptly short, and arrest its progress.

Cerated glass of antimony has been much extolled by Sir John Pringle for its great efficacy in the cure of dysentery, and may therefore be given if the other medicines are not found to answer. The dose for an adult is about eight grains; but it will be most advisable to begin with four or five grains, increasing the quantity according to the effect produced.

A novel method of using emetic medicines in dysentery has been recommended by a late writer ||; and we are assured by him, that he has found the practice highly successful. This is in the form of a clyster; and that which he has experienced to answer best, has been about three drachms of ipecacuanha root, bruised and boiled in a quart of water down to a pint, which he repeats twice or thrice in twenty-four hours.

If dysentery is accompanied with violent retchings or a severe

|| See Observations on the Nature and Cure of the Diseases of the East and West Indies, by Thomas Clarke, Surgeon.

- Vel,*
3. R Magnes. Sulphat. ʒi.
Mannæ Optim. ʒss.
Aq. Fervent.
— Menth. Pip. aa f. ʒiiss.
- Tinct. Rhei, f. ʒij. M.
Cujus sit dosis cochlearia quatuor pro re nata.
- * 4. Hydrargyr. Submuriat. gr. iij.
Pulv. Jalapæ, ʒj.
Syr. Rhamni, q. s. M.
ft. Mass. in pilulas v. pro dos. dividenda.
- † 5. R Infus. Sennæ. Compos. f. ʒv.
Potassæ Tartrat. ʒj.
Antimon. Tartar. gr. ij. Solv.
Hujus misturæ sumantur cochl. iv. quolibet trihorio, donec venter rite solutus erit.
- ‡ 6. R Pulv. Ipecac. Com. gr. iij.
Confect. Aromat. gr. x. M.
ft. Bolus, 4tis horis sumendus.

- Or,*
3. Take Sulphate of Magnesia, one ounce.
Manna, half an ounce.
Warm Water,
Peppermint Water, of each two ounces and a half.
Tincture of Rhubarb, two drachms.
Of this solution four large spoonful may be taken occasionally.
- * 4. Take Submuriate of Mercury, three grains.
Powdered Jalap, one scruple.
Syrup of Buckthorn, a sufficiency.
Form the mass into five pills, to be taken for a dose.
- † 5. Take Compound Infusion of Senna, five ounces.
Tartrate of Potass, one ounce.
Tartarized Antimony, two grains.
Dissolve them, and of this mixture four large spoonful may be taken every three hours, until the bowels are sufficiently moved.
- ‡ 6. Take Compound Powder of Ipecacuanha, three grains.
Aromatic Confection, ten grains.
Make them into a bolus, to be taken every four hours.

vomiting on its attack, so as to threaten the patient with cholera morbus, neither emetics, purgatives, nor diaphoretics, will be advisable at first. In such cases, the stomach must be evacuated of its contents by the gentle stimulus of large draughts of chamomile-tea. The same, or weak broth, may be thrown up the intestines in the form of clysters until these are cleansed; after which an opiate should immediately be given. If the opium is rejected, a double quantity of it is then to be administered in a clyster.

Should the vomiting continue very obstinate notwithstanding these means, the safety of the patient will then depend on bathing the region of the stomach well with tincture of opium and camphorated spirits; on repeating the clysters frequently with a proper quantity of opium in each; and on adopting the other steps advised under the head of Cholera Morbus. A blister applied over the stomach may sometimes be useful.

In dysentery, when the abdomen is hard, tense, and painful to the touch, and the gripings are frequent and severe, the application of flannels, wrung out in a warm decoction of chamomile-flowers and poppy-heads, with a small addition of camphorated spirits, to the part, may afford considerable relief; but should fomentations not procure the desired effect, a blister ought to be put on. Most cases of dysentery, and particularly during the acute stages of the disease, may be relieved by immersing the patient in a warm bath of a moderate temperature, and keeping him in it for some time. Perhaps rubbing the abdomen with some warm and stimulating embrocation* on his being taken out of the bath, might increase its effect.

To defend the inner coat of the intestines from the acrimony of its contents, and to counteract the vain attempts at evacuation, it will be necessary to give something to be discharged. Here then we should not only administer mucilaginous substances, such as solutions of gum acacia in milk, preparations of barley, rice, arrow-root, &c. † by the mouth; but we should likewise inject a clyster of a similar nature ‡ three or four times in the course of

* 7. R Liniment. Saponis, f. ℥iss.

Tinct. Opii, f. ℥ss.

Olei Rosmarin. f. ℥i. M.

ft. Embrocatio.

† 8. R Gum. Acaciæ, ℥ij. Solv. in

Decoct. Hordei, Oij. et adde

Syrup. Cort. Aurant. f. ℥ij.

Bibat æger pro potu ordinario.

Vel,

9. R Misturæ Corn. Usti, Oj. in die.

‡ 10. R Decoct. Amyli, f. ℥v.

Oli. Olivæ, f. ℥ss. M.

ft. Enema; adde pro re nata,

Tinct. Opii, f. ℥ss—℥i. M.

ft. Enema.

* 7. Take Soap Liniment, one ounce and a half.

Tincture of Opium, half an ounce.

Oil of Rosemary, one drachm.

Mix them for an embrocation.

† 8. Take Gum Acacia, two ounces. Dissolve it in

Barley Water, two pints, and add

Syrup of Orange Peel, two ounces.

The patient may take this for ordinary drink.

Or,

9. Take Mixture of Burnt Hartshorn, one pint daily.

‡ 10. Take Decoction of starch, five ounces.

Olive Oil, half an ounce.

Add occasionally

Tincture of Opium, half a drachm to one drachm.

Mix them for a clyster.

the day. All vain attempts to go to stool, as also all violent strainings in evacuating the contents of the bowels, ought carefully to be avoided by the patient throughout the disease; for if obedience be paid to every seeming call of nature, the straining which ensues will be highly detrimental, as little or nothing, except mucus and blood, comes away in four out of five efforts.

If the fundament becomes inflamed or excoriated, the parts should be anointed with a little soft pomatum or prepared lard, after each evacuation.

In the cure of Indian dysentery, mercury is the remedy now much relied on, but it is to be employed in an early stage of the disease. The plan recommended is, to give the hydrargyri submuriæ in a considerable dose night and morning without interruption, accompanied by a mercurial friction of the abdomen until the mouth becomes sore. If diarrhœa ensues, this symptom is not to be interfered with, but rather encouraged by an occasional purgative of the sulphate of soda or rhubarb. I am much inclined to doubt, however, whether mercury so employed as to produce salivation will be found useful, or even innocent, in the cure of real dysentery. Indeed I should think it could not fail in many instances to prove hurtful, and particularly in the doses which are mentioned. When given, it probably might be found best to combine it with ipecacuanha, as, for instance, half a grain of calomel with one of ipecacuanha every two hours, until the gums are affected, or we may administer it combined with antimonial powder and opium.

In the inflammatory variety of dysentery, the necessity of previous bleeding and purging to the employment of mercury, with the view of producing ptialism, must be obvious to every practitioner.

Where there exists a disease of the liver, or any diseased action of the biliary system in dysentery, mercury has certainly been found highly useful; and it is from its singular utility in this combination of disease, that the practice has become in warm climates so general of treating it, in all its stages, by this remedy; a treatment, however, which must in many cases be improper. The connexion between dysentery and the deranged functions of the skin and liver has been illustrated by Dr. Johnson, who is an advocate for considerable doses of hydrargyri submuriæ, combined with small portions of opium. We are also told by a modern writer* that a proper combination of these two medicines has a surprising effect in restoring the natural balance of the vascular system, and in promoting the free secretion of bile. He says, that when it fails in acting forcibly on the skin in dysentery, small doses of the pulvis antimonialis and camphor may perhaps be added with advantage, the warm bath being occasionally used at the same time to equalize the circulation.

* See Practical Illustrations of Typhus and other Febrile Diseases, by J. Armstrong, M.D.

There are some grounds for presuming that the disease which the authors here quoted* have called the dysentery of India, is in its nature, symptoms, and causes, and likewise in its method of treatment, very different from that which is described under this name in other countries; that it differs in nothing from the bilious fluxes so commonly to be met with there, and arises from an affection of the liver; for they describe the stools as being copious and liquid, frequently bilious, and seldom or never as containing scybala—symptoms by no means characteristic of true dysentery.

The singularity in the appearance of the fæces (as seldom passing by the anus in the form of scybala, but, whether by the action of medicine or otherwise, being generally loose and liquid) has not passed by unobserved by Sir James Macgregor, Mr. Banfield†, and others; and it has been conjectured that this peculiarity in tropical dysenteries arises probably from the intestinal secretions being considerably increased in consequence of climate, the secretions in such temperatures being more thin and acrid than in the climates of Europe, and hence scybala are easily broken down and amalgamated with the more fluid matter in their passage along the intestinal canal to the rectum.

In the secondary attacks of Indian dysentery, where the relaxed and weakened state of the bowels seemed to keep up the disease, the nitric acid, in the quantity of about two drachms in the day, in barley-water, has proved a useful adjunct in the cure, and has been found to diffuse an agreeable sensation of warmth through the whole line of the alimentary canal. On leaving off the use of this medicine, an infusion of quassia, calumba, or cascarilla, may be administered till the stomach and bowels have recovered their vigour and proper tone.

At the commencement of dysentery it would be improper to employ either opiates or astringents; but in the second stage, where the patient's strength is exhausted by frequent returns of the complaint, proceeding rather from a weak relaxed state of the bowels than from any remains of malignancy, a use of these remedies will prove both proper and beneficial, taking care to obviate costiveness, and evacuate the contents of the intestines from time to time, by administering a few grains of rhubarb, or some such gentle laxative.

In this stage of this disease, should the patient's rest be much disturbed throughout the course of the night from the frequency of the motions, we may direct an opiate‡ to be taken at bed-time.

* See M'Gregor's Medical Sketches; Clarke on the Diseases of Warm Climates; Milne's Account of the Diseases that prevailed during two Voyages to the East Indies; and Essay on the Influence of Tropical Climates on European Constitutions, by J. Johnson, M.D.

† See his Practical Treatise on Tropical Dysentery.

‡ 11. R Aq. Cinnam. f. ʒvi.
Spirit. Pimentæ, f. ʒss.
Syrup. Zingib. f. ʒi.
Tinct. Opii, m xxv. M.
ft. Haustus.

‡ 11. Take Cinnamon Water, six drachms.
Spirit of Pimento, half an ounce.
Syrup of Ginger, one drachm.
Tincture of Opium, forty drops.
Mix them as a draught.

The hyoscyamus (henbane), by its anodyne and gentle laxative qualities, seems a medicine well adapted to this disease, and may be tried when we cannot venture on opium.

In chronic and habitual fluxes, which are complaints frequent with those who have suffered much sickness in tropical climates, it is seldom, indeed, that relief can be obtained without the aid of opium, and it is often found necessary to add it to all the other medicines we administer. Opiates, especially those of the warmer kind, such as the *confectio opii*, &c., are as valuable in these cases as the bark of cinchona is in intermittents.

When the bowels have been effectually relieved, it often happens, after the disease has continued for some time, from the tender state of the rectum, that a severe and troublesome tenesmus remains. Under such circumstances, or in the advanced stage of the disease, soothing and anodyne clysters are much used by professional men; but in some instances the irritation produced by introducing the pipe more than counterbalances the soothing effects of the injections. As a commodious substitute for anodyne clysters, we may therefore direct the patient to insinuate into the anus a pill of about two grains of opium, previously somewhat softened betwixt the fingers. We may also cause warm fomentations to be applied to the parts, and a bladder filled with hot water to the hypogastric region. These will be likely to afford great relief to the patient.

We are told that opium, combined with the nitric acid, agreeably to the prescription* here advised, has, on various trials, been found to have been attended with the best effects in the advanced stage of dysentery, when all other remedies have proved ineffectual, and even in cases where death seemed almost inevitable†.

The astringents best adapted for the cure of a dysentery, are the different preparations of catechu, gum kino, logwood, &c., which may be given as below‡, the patient at the same time

† See Observations on the Effects of Nitric Acid and Opium in the Cure of Dysentery, in vol. iii. p. 413, of the Medical and Physical Journal.

Vel,

12. R Opii, gr. j.—ij.
Pulv. Antim. gr. j.
Confect. Aromat. q. s. M.

ft. Pilula.

- * 13. R Acid. Nitrici Dilut. f. 3ij.
Tinct. Opii, ℥ xxx.

Aq. Puræ, f. 3ij. M.

Capiat cochleare minimum ter quaterve die in quovis vehiculo.

- ‡ 14. R Extract. Lign. Campech. 3j.
Mist. Cretæ, f. 3iv.
Tinct. Catechu, f. 3ij.

Spirit. Myristicæ, f. 3j. M.

ft. Mistura, cujus sumat cochl. larg. ij. quartis horis.

Or,

12. Take Opium, one grain to two grains.
Antimonial Powder, one grain.
Aromatic Confection, a sufficiency to form a pill.

- * 13. Take Diluted Nitric Acid, two drachms.
Tincture of Opium, forty-five drops.

Pure Water, three ounces.

Mix them, and take about a tea-spoonful three or four times a day.

- ‡ 14. Take Extract of Logwood, one drachm.
Chalk Mixture, four ounces.
Tincture of Catechu, two drachms.

Spirit of Nutmeg, one ounce.

Of this mixture take two table-spoonful every four hours.

taking Port wine properly diluted with water for his ordinary drink. Lime-water mixed with an equal proportion of milk has been much recommended as a useful remedy in the latter stage of the disease. During my residence in the West Indies, I was in the habit of recommending a strong decoction of logwood with the barks of pomegranate-fruit and the cushew cherry-tree, or anacardium, as an astringent drink, from which my patients seldom failed to experience a good effect.

In the advanced and chronic stage of the disease, as acidity at the stomach is apt to prevail, absorbents, such as the *mistura cretæ*, *pulvis cretæ compositus*, *liquor calcis*, &c., combined with opiates, will be useful.—See *Dyspepsia* for formulæ of these medicines.

Where there exists an extreme degree of atony, and a frequent discharge of fæces without pain, small doses of *zinci sulphas* combined with opium have proved of singular utility in many instances.

The impaired tone of the intestines is likewise to be restored by a use of tonics and bitters*, together with a light nutritive diet and moderate exercise. The application of cold water to the abdomen, and particularly to the lower parts of it, by means of cloths or sponges; or the immersion of the lower part of the trunk in a tub of water, may probably prove a good auxiliary mean.

Vel,

15. R Confect. Aromat. ʒj.

Aq. Cinnam. f. ʒv.

Spirit. Pimentæ, f. ʒj.

Tinct. Kino, f. ʒij. M.

ft. Mistura. Adde pro re nata singul. dosi,

Tinct. Opii, ℥ x.

Vel,

16. R Confect. Opii, gr. x.

Aq. Cinnam. f. ʒjss.

Tinct. Catechu, f. ʒjss. M.

ft. Haustus, quartis horis sumendus.

Vel,

17. R Elect. Catechu, gr. xv.

Aq. Pimentæ, f. ʒjss.

Tinct. Kino, f. ʒj.

—— Opii, ℥ x. M.

ft. Haustus.

* 18. R Cort. Simaroubæ contus.

—— Cascaril. āā ʒss. coque ex

Aq. Bullient. Oj. ad ʒviij. colat. adde

Spirit. Cinnam. f. ʒij.

Tinct. Opii, ℥ xxx. M.

Or,

15. Take Aromatic Confection, one drachm.

Cinnamon Water, five ounces.

Spirit of Pimento, one ounce.

Tincture of Kino, two drachms.

This mixture may be taken as the former, adding occasionally to each dose,

Tincture of Opium, fifteen drops.

Or,

16. Take Opium Confection, ten grains.

Cinnamon Water, one ounce and a half.

Tincture of Catechu, one drachm and a half.

Mix them, and take this draught every four hours.

Or,

17. Take Electuary of Catechu, fifteen grains.

Pimento Water, one ounce and a half.

Tincture of Kino, one drachm.

—— Opium, fifteen drops.

Mix them for a draught.

* 18. Take Simarouba Bark, bruised,

Cascarilla Bark, of each half an ounce.

Boil them in a pint of water until reduced to eight ounces, strain off the liquor, and add

Spirit of Cinnamon, two ounces.

Tincture of Opium, forty-five drops.

The fever accompanying this disease sometimes appears under an intermittent or remittent form, and is protracted much longer than it otherwise would have been, in consequence of its being so complicated. In such cases, its treatment is to be regulated as directed under these heads, by a use of the bark of cinchona, &c.

In those instances where a dusky sallow hue of the countenance, tenderness upon pressure over the region of the liver, and a clayey appearance in the fæces which happen occasionally to be voided, manifest the presence of a diseased or obstructed state of the liver; we should resort to mercury, pushing it to such an extent as to keep up a gentle affection of the mouth until the symptoms are mitigated. We may give the nitric acid at the same time.

In the first stage of dysentery, a use of ripe fruits will be proper; but in a more advanced period, where any morbid acidity seems to prevail in the stomach, they should not be recommended.

Every sort of food which readily tends to putrefaction ought carefully to be avoided throughout the whole course of the disorder, as also all kinds of fermented and spirituous liquors; supporting the patient's strength with preparations of barley, rice, sago, flour, panado, Indian arrow-root boiled in milk, occasionally varied for gelatinous broths. During the state of convalescence, Port wine or Madeira, or even a moderate quantity of brandy, properly diluted with water, may be allowed.

Cipiat cochl. iij. quarta quaque hora.

Vel,

19. R Infus. Cort. Cuspariæ, f. ʒvj.

Tinct. Calumbæ, f. ʒj.

—— Catechu, f. ʒij.

Acid. Nitric. Dilut. f. ʒi. M.

ft. Mistura, cujus sit dosis cochlearia magna iij. ter in die.

Vel,

20. R Decoct. Cort. Cinchonæ, f. ʒjss.

Tinct. Calumb.

—— Cort. Aurant. aa f. ʒjss.

—— Kino, m xxv. M.

ft. Haustus, ter quaterve die sumendus.

Vel,

21. R Extract. Gentian.

—— Lign. Camp. aa ʒj.

Ferri Sulphatis,

Gum. Myrrh. aa ʒss.

Syrup. Zingib. q. s. M.

Fiant pilulæ xl. quarum iij. sumat ter in die cum Decoct. Simaroub. aut infusi Cascarillæ, f. ʒij.

Mix them, and let the dose be three table-spoonsful every four hours.

Or,

19. Take Infusion of Angustura Bark, six ounces.

Tincture of Calumba, one ounce.

—— Catechu, two drachms.

Diluted Nitric Acid, one drachm.

Of this mixture, the dose may be three table-spoonsful thrice a day.

Or,

20. Take Decoction of Peruvian Bark, one ounce and a half.

Tincture of Calumba,

—— Orange Peel, of each one drachm and a half.

—— Kino, forty drops.

Mix them for a draught, to be taken three or four times a day.

Or,

21. Take Extract of Gentian,

—— Logwood, of each one drachm.

Sulphate of Iron,

Gum Myrrh, of each half a drachm.

Syrup of Ginger, a sufficiency to form the mass, which is to be divided into forty pills, and of these three are to be taken morning, noon, and night, washing them down with about two ounces of a decoction of Simarouba Bark, or an infusion of Cascarilla.

Persons recovering from a dysentery should observe the greatest caution and regularity in their mode of living, and they should go warmly clothed by wearing flannel next the skin, as the disease is very liable to relapse from any fresh exposure to cold, wet, damp night-air, or sudden atmospherical vicissitudes.

The importance of warm clothing, both in the prevention and cure of bowel complaints, is too obvious to require my saying much on the subject; I will therefore only observe, that warmth ought not to be a secondary object; on the contrary, it ought to be the first; for if a patient only wears his ordinary clothing, he will receive comparatively little benefit from any medicine. A waistcoat of flannel or fleecy hosiery next to the skin ought always to be worn, as likewise sliders of the same; and these should be laid aside with caution, and by slow degrees. The writer* of a small tract on dysentery lays much stress on swathing the abdomen with flannel bandages, as being the best mode of confining a certain degree of heat over that part of the body which is the seat of the disease; and this practice is reported by Sir James M'Gregor† to have been found very serviceable in many cases, both as affording an equal support, and keeping up a due degree of warmth on the surface of the abdomen.

Dysentery being by most considered of a very contagious nature, every precaution should be taken, particularly in situations where many people are crowded together (as in camps, and on board of ships), to prevent the disease from spreading. The sick ought immediately to be separated from those in health, or who labour under any other disorder; they should be lodged, if possible, in distinct rooms or tents, and the strictest attention should be paid to cleanliness, taking care to remove the stools as soon as voided, and to have them quickly buried; to ventilate the chamber sufficiently, and sprinkle it now and then with a little warm vinegar; and to change the linen both of the body and beds frequently. In addition to these means, the fumigations advised under the head of Typhus Gravior may be resorted to.

For the destruction of contagion of every species, where a number of persons are collected together, Dr. Rollo‡, in addition to free ventilation and cleanliness, recommends the following as being an easy, safe, and very effectual method, and which is pursued at the Royal Artillery Hospital.

Take of pulverized manganese, two parts; common salt, four parts; sulphuric acid, three parts; water, one part. A suitable proportion of this mixture is to be put into an earthen vessel, and suffered to remain until no vapours arise from it, or its peculiar smell is not perceptible. He mentions, that when a patient is admitted with an infectious disease, one or two gallipots are placed

* See H. Dewar's Observations on Diarrhoea and Dysentery, as those Diseases appeared in the British Army during the Campaign in Egypt in 1801.

† See Medico-Chirurgical Observations, vol. vi. p. 433.

‡ See his Account of the Royal Artillery Hospital at Woolwich.

in the wards with about three ounces of the manganese and salt, to which is added half an ounce of water, and then is gradually poured on the whole a part of the ounce of sulphuric acid, the remainder occasionally.

These quantities are according to the proportions previously stated, and they answer the consumption of a day. A pot or two is placed, we are informed by the Doctor, on the outside of the doors of the same wards in the gallery. The vapour is diffused over the whole ward, penetrates every where, and destroys every other smell than what itself conveys. Even the contagion of the small-pox has been noticed to be destroyed by this vapour, and of course it is likely to prove destructive of other contagions. In the manner here described, it can be used with due effect, and without the least prejudice to the sick.

Its application, besides annihilating contagion, may also prevent its formation: and its use is recommended by Dr. Rollo in all situations where a number of persons in health are confined together, as on board of transports, especially in bad weather. Two or three gallipots, with the quantities before mentioned, he says, would be sufficient, and it would not be necessary to use them oftener than twice or thrice a week.

It has been recommended to make trial of the remedy in marshy situations, where there may be an unavoidable exposure: in these places the gallipots with the materials should be placed in the inside of the windows and doors of the habitations next to the marshes.

CLASS II.

NEUROSES, OR NERVOUS DISEASES.

THE character assigned to this class of diseases is, preternatural affection of sense and motion, without idiopathic or primary pyrexia, and without local disease.

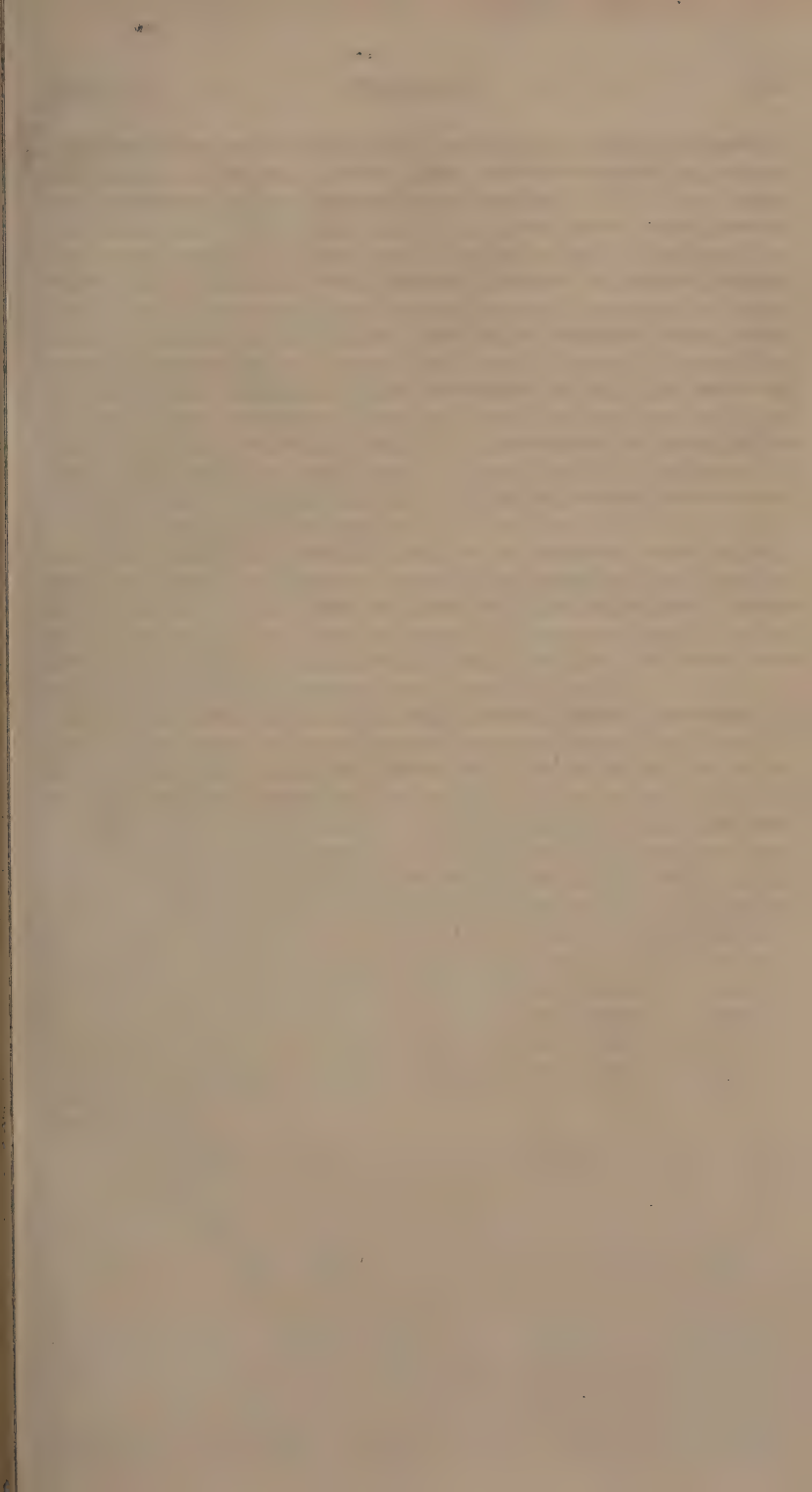
ORDER I.

COMATA.

DIMINUTION of voluntary motion, with sleep, or a suspension of sense, is the character of this order of diseases.

APOPLEXIA, OR APOPLEXY.

THIS disease consists in a sudden diminution or abolition of all the senses, external and internal, and of all voluntary motion,



while at the same time the heart and lungs continue to perform their action. The state of the pulse, difficult respiration, stertorous breathing, profound sleep, and the affection of all the powers of volition, will distinguish apoplexy from palsy: the stertor, sopor, diminution of the power of volition, and the absence of convulsions, will distinguish it from epilepsy. In general it may readily be distinguished from intoxication by the patient not being roused by shouting in his ear, by applying volatile spirits to his nostrils, nor by shaking or pinching him. His respiration is low, labouring, and irregular, his countenance flushed, the pupils of his eyes often contracted, and his breath not tainted with the smell of wine or spirituous liquors. The extreme of insensibility from intoxication is sometimes, however, with difficulty to be distinguished from apoplexy, but its duration seldom exceeds ten or twelve hours at the utmost.

Apoplexy makes its attack chiefly at an advanced period of life, and most usually on those who are of a corpulent habit, with a short neck and large head, and who lead an inactive life, make use of a full diet, or drink to excess. Young subjects are not, however, exempted from apoplexy, but it is very rare when compared with persons advanced into the vale of years.

The immediate cause of apoplexy is most generally a compression on the brain, produced either by an accumulation of blood in the vessels of the head, and distending them to such a degree as to compress the medullary portion of the brain; or by an effusion of blood from the red vessels, or of serum from the exhalants; which fluids are accumulated in such a quantity as to occasion compression; but it takes place sometimes without congestion, extravasation, exudation, or effusion in the head being the consequence, as in many instances we see patients recovering quickly from a fit of apoplexy without any paralytic affection being left behind, which could not happen if either of these had existed. Such cases have by some physicians been supposed to originate in a peculiar condition of the brain and nerves alone, unattended by any discoverable alteration in their anatomical structure. Possibly a particular condition of the stomach and local irritations will produce this state.

When the disease arises from an accumulation of blood in the vessels of the head, or by an effusion of blood from the red vessels, it is called sanguineous apoplexy, and when occasioned by serum from the exhalants, it is known by the name of serous apoplexy.

The states of over-distension and effusion may be brought on by whatever increases the afflux and impetus of the blood in the arteries of the head; such as violent fits of passion, mental anxiety, indolence, great exertions of muscular strength, severe exercise, excess in venery, gluttony, drunkenness, intense study, stooping down for any length of time, wearing any thing too tight about the neck, long exposure to intense cold or a vertical sun, the sudden suppression of any long-accustomed evacuation, the appli-

cation of the fumes of certain narcotic and metallic substances, such as opium, alcohol, charcoal, mephitic airs, mercury, &c.; and by blows, wounds, and other external injuries. In short, apoplexy may be occasioned by whatever fills, distends, obstructs, ruptures, lacerates, corrodes, or compresses the vessels of the brain and its meninges too much, and thereby urges, retards, or entirely impedes the flow of blood through the same; or in any manner destroys the intimate fabric and structure of the brain.

A loss of vitality in the brain has been assigned as a cause of apoplexy in those cases where neither extravasation, exudation, nor effusion, are to be discovered on dissection.

The circumstances disposing to sanguineous apoplexy are, a full and luxurious mode of living, with but little exercise, a sanguine temperament, a full habit, middle age, short neck, suppressed evacuations, and warm weather. Those which dispose to serous apoplexy, are a phlegmatic temperament, cachectic habit of body, poor living, depressing passions of the mind, much study, watching, and old age.

Sanguineous apoplexy is sometimes preceded by giddiness, dimness of sight, drowsiness, loss of memory, or faltering of the tongue in speaking; but it more usually happens, that without much previous indisposition the person falls down suddenly, the face is red, and appears puffed up, the veins of the head, particularly of the eyes, temples and neck, seem turgid, the head feels hot, the eyelids are half open and rigid, the eyes are prominent and fixed, the breathing is difficult and stertorous, and for the most part the pulse is strong, regular, and generally less frequent than what is natural. In a few instances, a grinding of the teeth, with slight convulsive motions, are observable. When the disease continues for any length of time, the pulse becomes languid, weak, and slow, and the breathing is shortened, until at length it ceases altogether.

In serous apoplexy the attack is more gradual in general, the face is pale and tumid, the veins are depressed, the pulse is small, weak, irregular, and intermitting, respiration is impeded and stertorous, and the extremities are cold and flaccid. Sometimes these appearances are preceded by vertigo, torpor, and an impediment in the speech, together with a failure of memory.

Although the whole body is affected with the loss of sense and motion in apoplexy, it takes place nevertheless very often more upon one side than the other, which is called a hemiplegia, and in this case the side least affected with palsy is somewhat convulsed.

In some few instances of apoplexy the patient lies for several days insensible and motionless, and yet gradually recovers the use of his understanding, and his muscular strength; but for the most part he is permanently deprived of the command of one side of his body, or he regains it imperfectly after a time; his mind sustains a shock which is never recovered from; his sensations and perceptions becoming less accurate, and his memory and powers of

combining being much weakened, or at least his faculty of expression : for even while his memory and imagination are unimpaired, he is not always able to find appropriate words to express the notion which is excited in his mind.

In forming our opinion as to the event, we must be guided by the violence of the symptoms, and according as the vital functions are more or less disordered. If the fit is of long duration, the respiration laborious and stertorous, the deglutition continues to be impeded, the pulse quick and hard, the extremities cold, and the person advanced in years, the disease in all probability will terminate fatally. In some cases it goes off entirely, either by diarrhœa, hæmorrhage, return of the hæmorrhoidal or any other habitual discharge, and sometimes by the appearance of fever ; but more frequently it leaves a state of mental imbecility behind it, or terminates in a hemiplegia, or in death. Even when a person recovers from an attack of this disorder, it is very apt to return after a short period of time, and in the end to prove fatal.

Where there is extravasation, the patient's recovery will be slow and difficult ; for the power of absorption cannot be equal to its being immediately taken up. When the person's recovery is immediate, it is a presumptive evidence that there has been neither extravasation, effusion, nor exudation, but that the compression arose from a repletion in the vessels of the brain. The sanguineous apoplexy is more dangerous than the serous.

Dissections of those who have died of sanguineous apoplexy offer ample proof of the arterial as well as the venous system being in a remarkable state of repletion. When the scalp is divided, there is sometimes a considerable flow of blood from the occipital and frontal veins ; indeed, during the dissection the venous blood flows from all parts of the head. The dura mater is sometimes thickened and bound to the cranium by strong adhesions ; sometimes the tunica arachnoides loses its transparency, is opaque, and much thickened. The pia mater is often remarkably vascular ; the veins are turgid with dark blood, and in particular parts of this membrane there appears high arterial action ; the whole surface sometimes acquires a bright vermilion tint. Between the pia mater and tunica arachnoides there is often to be observed a serous effusion which in some bodies is colourless ; in others, turbid, bloody, or even mixed with streaks of coagulable lymph. With respect to the substance of the brain, it is frequently found unusually firm, and when cut into, the numerous points of blood shew that the divided vessels are enlarged. A considerable quantity of serous fluid is often found in the ventricles, and these are much enlarged. For the most part, extravasated blood is met with in the cranium, sometimes between the membranes, and sometimes in the substance of the brain, and sometimes in the ventricles. Dissections have confirmed the observation, that the blood is generally but not invariably found extravasated in the hemisphere opposite to the side of the body which was paralyzed. In most instances the extra-

vasation of blood is confined to the cerebrum, but it has not unfrequently been found in the cerebellum*; we do not always discover extravasation of blood, but we never fail to find the remains of greatly increased action, and great congestion in the arterial and venous systems of the brain. Sometimes the longitudinal and lateral sinuses are swelled and distended.

In those who die of serous apoplexy, dissections shew the cerebral arterial system nearly empty, their veins contain more blood, but less than in the sanguineous apoplexy; the brain is somewhat flaccid and soft, with perhaps a little watery effusion on its surface, between the convolutions or in the ventricles; the left cavities of the heart, as well as the arteries, are empty; the right cavities contain some coagula of black blood; the pulmonary organs are full; frequently the digestive passages are impeded, and in a state of remarkable plenitude. In some dissections of serous apoplexy, venous turgescence, as well as effusion of serum, has been discovered; and in others, there were satisfactory proofs of increased arterial action having existed shortly before death.

In the cure of sanguineous apoplexy no time should be lost in employing powerful remedies, the chief of which is early and extensive depletion by bleeding; and it will be found that the action of the heart and arteries will require increased freedom and force, as the repeated bleedings have the effect of lessening the stupefactive pressure existing on the brain. On the person's being seized, due care must be taken to remove all compression from about the neck, to support him in as erect a position as possible, and to allow a free admission of cool air. These steps being adopted, sixteen or eighteen ounces of blood should immediately be taken away, and if it can be drawn from the jugular vein instead of the arm, it will be the more likely to be attended with a good effect. When any branch of the temporal artery seems so turgid as to admit of being easily opened, drawing blood from thence may probably prove a still more effectual way of unloading the vessels of the brain.

In those cases where one side of the body is perceived to be more affected with the loss of motion than the other, the bleeding should be made, if possible, on the opposite side to that affected, as dissections shew that the congestions producing apoplexy are generally on the side which is not affected.

If the first bleeding has not been of service, and the disease is unequivocally established, the operation should quickly be repeated a second time; and if it is ascertained that this also is ineffectual in stopping the progress of the disease, a third bleeding ought to follow, as blood-letting is to be regarded as the most effectual remedy we can employ in sanguineous apoplexy. The quantity of blood to be drawn off must be regulated by the appearance and habits of the patient; by the circumstances of the attack; its violence and duration; the effects of the previous evacuations;

* See Cases of Apoplexy, by J. Cheyne, M.D.

the appearance of the blood, which is often sily; and the state of the circulation; particularly the relief of the pulse and breathing, and the reduction of the complexion.

After general bleeding, leeches may be applied, if necessary, to the temples, or the scarificator and cupping-glasses to the occiput; and when sufficient evacuations have been procured by these means, we may then apply a large blister to the nape of the neck, and small ones to the extremities, together with cataplasms to the soles of the feet, or warm fomentations.

Should apoplexy appear in a gouty constitution, or after symptoms of the gout, the lancet, I think, may be used with safety and advantage.

If the power of swallowing remains, some active purgative* should be given by the mouth in divided portions, and at proper intervals, so as not to excite any vomiting; but if not, the contents of the intestines are to be dislodged by putting a couple of drops of croton oil on the patient's tongue, and then administering a strong clyster†, or one composed of a solution of soap, which is to be repeated every three or four hours, until a sufficient effect is procured.

* 1. R. Infus. Sennæ Compos. f. \bar{z} iv.

Potassæ Tartratis, \bar{z} vj.
Tinct. Jalapæ, f. \bar{z} ij.
Syrup. Rhamni, f. \bar{z} iiij.

Capiat dimidium pro dos.

Vel,

2. R. Gum. Gambog. gr. iij.
Terito bene cum
Infus. Sennæ C. f. \bar{z} j. et adde.

Tinct. Jalapæ, f. \bar{z} ij. M.
ft. Haustus.

Vel,

3. R. Hydrargyr. Submuriat. gr. vj.

Extract. Colocynth. C. gr. xv. M.

Fiant Pilulæ iv. pro dos.

† 4. R. Fol. Sennæ, \bar{z} iiij.
Aq. Fontan. Oj. Coque leniter ad
Oss.

Colat. adde
Sodæ Sulphat. \bar{z} j.
Ol. Ricini, f. \bar{z} j. M.
ft. Enema.

Vel,

5. R. Extract. Colocynth. C. \bar{z} ss.— \bar{z} i.

Infus. Sennæ Comp. f. \bar{z} xi.

Ol. Ricini, f. \bar{z} j. M.
ft. Enema, statim injiciendum.

* 1. Take Compound Infusion of Senna,
four ounces.

Tartrate of Potass, six drachms.

Tincture of Jalap, 2 drachms.

Syrup of Buckthorn, three
drachms.

Mix them, and let the half be taken for a
dose, to be repeated after an hour or two,
if necessary.

Or,

2. Dissolve Gamboge, three grains, in

Compound Infusion of Senna, one
ounce, and add

Tincture of Jalap, two drachms.

Mix them for a draught.

Or,

3. Take Submuriate of Mercury, six
grains.

Compound Extr. of Colocynth,
fifteen grains.

Make them into four pills, to be taken for
a dose.

† 4. Take Senna Leaves, three drachms.

Pure Water, one pint.

Boil them slowly until reduced to half a
pint, strain off the liquor, and add

Sulphate of Soda, one ounce.

Castor Oil, one ounce.

Mix them for a clyster.

Or,

5. Take Compound Extract of Colocynth,
half a drachm to a drachm.

Compound Infusion of Senna,
eleven ounces.

Castor Oil, one ounce.

Mix them, and inject this clyster im-
mediately.

Emetics are made use of by some practitioners. Where the disease has been brought on by intoxication, or by a large indigested meal distending the stomach, pressing upon the aorta descendens, obstructing the free expansion of the lungs, and thus crowding the arteries of the head with more blood than ought to be there, the exhibition of an emetic may be proper, and particularly so if it has been preceded by venesection; or should vomiting arise naturally, the stomach may be relieved by washing it out with a little camomile tea. The frequency with which attacks of apoplexy occur after a full meal, is a convincing proof of the immediate connexion which subsists between the stomach and brain; and where the attack has been occasioned by an over-quantity of food received into the former, the sooner it is unloaded the sooner will the obstruction of the circulation be relieved. Here then an emetic of about half a drachm of the sulphate of zinc, may be administered with great propriety; and should the desired effect not be produced in ten minutes or so, the same dose might be repeated. Where apoplexy arises from, or is occasioned by an extravasation either of blood or serum on the brain, more particularly the former, it cannot be denied, I think, that an emetic would be a very hazardous remedy. A supposed case of apoplexy which fell under the care of Dr. Langslow, of Halesworth, and Mr. Crowfoot, of Beccles, gave rise to much controversy at the time with respect to the propriety of administering emetics in this disease. Those who wish to peruse the arguments which have been brought forward on the occasion by these gentlemen, as well as by many other practitioners, will find the subject amply discussed in the sixth and seventh volumes of the Medical and Physical Journal.

When the fit goes off, we may advise some of the cephalic and nervous medicines recommended under the head of Palsy; and in order to obviate any costiveness that may happen to arise, a little tincture of rhubarb may be taken occasionally.

In serous apoplexy, blood-letting may be more sparingly used than in the sanguineous. To promote an absorption of the effused serum, after bleeding proportionate to existing circumstances, it will be proper to have recourse to warm purgatives, sternutatories*, and a free application of blisters to the head, back, and extremities, and of sinapisms to the soles of the feet. Electricity is sometimes resorted to, and sparks drawn from the head, but it is only under a failure of the other remedies that this should be employed. Emetics in this species of apoplexy, as well as the former, seem of doubtful effect.

Stimulants of various kinds, such as volatile salts, cephalic elixirs and cordials, have been much employed in serous apoplexy; but as they determine the circulation to the head, their

* 6. Pulv. Asari Compos.

| * 6. Compound Powder of Asarabacca.

use appears not altogether advisable. When they are employed, sufficient evacuations should always precede their use.

Out of a fit of serous apoplexy, the cephalic and nervous medicines advised under the head of Palsy will be proper, taking some stomachic purgative now and then.

When apoplectic symptoms proceed from opium, or any other narcotic poison taken into the stomach, the offending matter ought to be got rid of as soon as possible, by exciting vomiting with tartarized antimony or sulphate of zinc, should none have arisen spontaneously. Having procured its discharge, we are to have recourse to bleeding, and the exhibition of acrid clysters, with the view of relieving the congestion in the brain and lungs, together with the other means recommended under the head of Vegetable Poisons.

Although stimulants are improper in apoplexy arising from other causes, still they may be employed with great safety and utility in those cases where it proceeds from any narcotic poison taken into the stomach, or otherwise applied to the body; but here, too, proper evacuations should be premised. The external stimulants in general use are volatile spirits applied to the nose and temples, rubefacient ointments to the breast and back, blisters, sinapisms with horseradish, and warm fomentations to the extremities, together with frictions with flannels or a flesh-brush impregnated with flour of mustard, and throwing cold water over several parts of the body, which in general proves one of the most effectual means of rousing apoplectics of this kind, particularly if the person is first carried out into the open air. The internal stimulants to be employed are, the volatile alkaline salts or spirits, white mustard-seed, horseradish, white scurvy-grass; and various aromatics, such as rosemary, lavender, &c., used either in substance, tincture, or in their essential oils.

If the disease arises in consequence of the suppression of piles, leeches should be applied to the hæmorrhoidal veins, fomentations must be employed, and the intestines be stimulated by means of aloëtic purges.

Those who, from a plethoric state of the blood-vessels of the head, are predisposed to an attack of apoplexy, will act prudently in confining themselves to a very spare diet, carefully abstaining from strong liquors, from all high-seasoned food, and from meat suppers. A limitation of the use of fluids in habits predisposed to plethora and apoplexy will likewise be worthy of attention. Dr. Mossman tells us* he was taught by long observation and experience to expect effects highly beneficial from the adoption of this plan; for he constantly noticed the phenomena of plethora and obesity are referrible, not to the taking in of *solid* but of *liquid* nutriment. Persons predisposed to apoplexy should likewise be careful to keep the body open by some gentle laxative, taken occasionally; and

* See Medical and Physical Journal, vol. ix. p. 412.

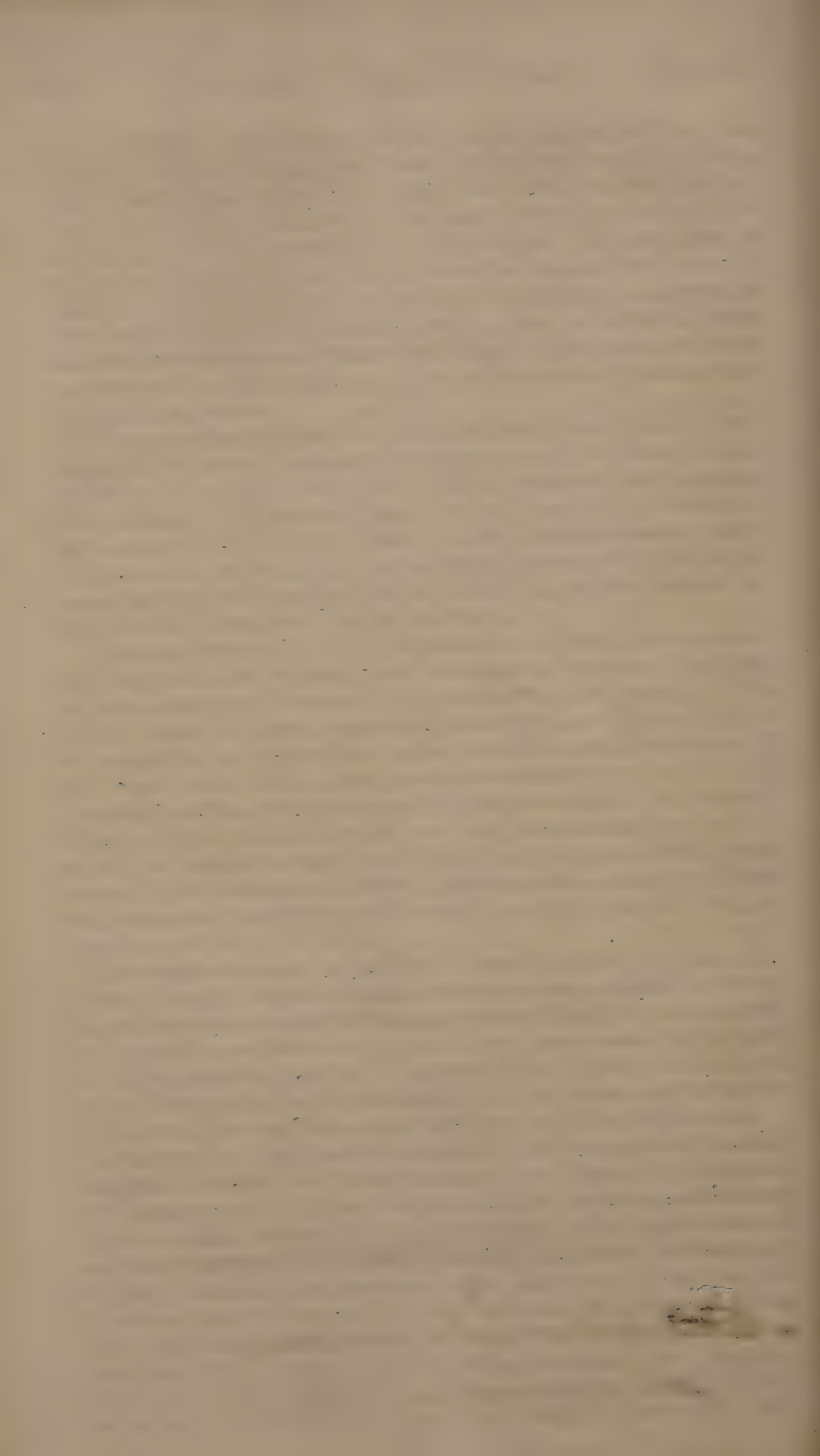
such moderate exercise ought to be used as will support the perspiration without hurrying respiration, or exciting heat. Nothing tight should be worn round the neck, which might retard the return of blood from the head to the heart; and when in bed, the head ought to be supported at a proper height. The feet should be kept warm and dry, and the extremes of heat and cold must be avoided. Nothing has a better effect in preventing apoplexy in those who are predisposed to its attacks, than a perpetual issue between the shoulders, or a seton in the neck: but great care must be taken not to allow them to dry up, without opening some other drain in their stead.

When an attack of apoplexy is immediately threatened, blood-letting is the remedy most to be relied on, and the blood should be drawn either from the jugular vein or temporal artery, as before advised. The extent of the bleeding can only be determined by the nature of the case. Under doubtful circumstances, where the symptoms are not very urgent, the application of several leeches to the temples, or scarifications with cupping at the back of the head or neck, may prove amply sufficient.

Where a lethargic disposition prevails, we should advise bleeding, but particularly topical, from the temples, by means of leeches, or from the nape of the neck by the scarificator and cupping. We should also administer cathartics frequently, and direct a blister to be applied to the head or in the immediate neighbourhood of it. Every thing which may tend to stimulate the brain, such as ardent spirits, strong wines, and tobacco, ought to be avoided. Where lethargy has been induced by great excitement of the mind, a change of scene, travelling by easy stages, cheerful company, the amusements of watering-places, and a course of those mineral waters which relax the bowels (such as those of Cheltenham) are worthy of a trial.

The coup-de-soleil, or stroke of the sun, which so frequently occurs in warm climates to those who are long exposed under its immediate and powerful influence, seems evidently to be an attack of apoplexy, and is to be treated in the same manner as pointed out in the preceding pages. The application of linen cloths wetted in cold vinegar and water to the temples, or rather over the whole of the head, having first cut off the hair, may likewise be tried.

It may not be improper to remark here, that as the vital principle frequently remains in a latent state for some time, and as we are yet unacquainted with any certain criterion between positive and apparent death besides that of putrefaction, some appearances of incipient decomposition should therefore be allowed to take place, in every case of sudden decease, before interment. The cessation of circulation and respiration, and coldness with rigidity of the limbs, taken separately, are not of sufficient importance, and even when combined, leave a slight opening for doubt; but putrefaction is the only certain proof of the occurrence of death which can be considered as conclusive. Every other circumstance, how-



ever strong as presumptive evidence, affords no proof for a positive one. In warm countries, where it is customary to bury the bodies within four-and-twenty hours, I have great reason to fear that premature interment sometimes happens.

PARALYSIS, OR PALSY.

PALSY is a diminution or total loss of the powers of motion and sensibility in certain parts of the body, often attended with drowsiness. In some instances the disease is confined to a particular part or set of muscles; but it more usually happens that one entire side of the body, from the head downwards, is affected, which is known by the name of hemiplegia.

If the power of motion and sense of feeling in the half of the body, taken transversely, be impaired, the complaint is denominated paraplegia.

Palsy may arise in consequence of an attack of apoplexy; and, like it, may be occasioned by any thing that prevents the flow of the nervous power from the brain into the organs of motion; hence tumours, over-distention and effusion, distortions of the spine, and a thickening of the ligaments that connect the vertebræ together, often give rise to it. It may also be occasioned by translations of morbid matter to the head, by the suppression of usual evacuations, and by pressure made on the nerves by luxations, fractures, wounds, or other external injuries. The long-continued application of sedatives will likewise produce palsy; as we find those whose occupations subject them to the constant handling of white-lead, and those who are much exposed to the poisonous fumes of metals or minerals, are very apt to be attacked with it. Whatever tends to relax and enervate the system, may likewise prove an occasional cause of this disease: hence those who lead a sedentary or luxurious life; those who are guilty of frequent irregularities, or great debaucheries; those who are engaged in intense studies during the night, or labour under great distress of mind or anxiety, are very subject to this malady.

It has very properly been doubted by some writers* whether palsy of the lower extremities alone, or of one single part, has so often its cause in the brain as it is said. The cause may, it is thought, also reside either in the nervous chord of the spine, or in the abdominal viscera, or in the affected limbs themselves. The spinal chord is certainly composed of a nervous mass, and has the same membranes as the brain; hence it may be affected by the same diseases, such as inflammation, suppuration, induration, tumour, congestion or ossification of the blood-vessels; collection of any fluid, by irritation, weakness, or exhaustion of the nervous

* See Observations on Deranged Manifestations of the Mind, by Dr. Spurzheim, p. 28.

mass. The spinal chord may also be injured or compressed by the deviation of any of the vertebræ. It is to inflammation of a more chronic form in that part, that we impute those shaking palsies which are attended with pain.

All the varieties of palsy more generally appear in the aged and infirm than in the young and robust. The left side is more frequently affected than the right.

A decline of energy is often to be regarded as a commencement of palsy. In the premature diminution of the capacity of either bodily or mental exertions, there may be, in many cases, a well-founded fear of ultimate paralysis, unless the tendency to it be in due time counteracted by the relinquishment of pernicious habits, and the administration of appropriate remedies.

Palsy usually comes on with a sudden and immediate loss of the motion and sensibility of the parts; but in a few instances it is preceded by a numbness, coldness, and paleness, and sometimes by slight convulsive twitches. When the head is much affected, the eye and mouth are drawn on one side, the memory and judgment are much impaired, and the speech is indistinct and incoherent. If the disease affects the extremities, and has been of long duration, it not only produces a loss of motion and sensibility, but likewise a considerable flaccidity and wasting away in the muscles of the parts affected.

It has been mentioned, that a curvature of the spine, owing to one or more of the vertebræ being displaced, sometimes induces paralytic affections of the lower extremities, from the pressure that they make upon the nerves of those parts; and that sometimes the disease appears to arise solely from a thickening of the ligaments that connect the vertebræ together, without any particular affection of the bones. When one of the vertebræ only is diseased, it is observed that the patient is more completely deprived of the power of his limbs than when two or more of them are displaced, owing, as Mr. Bell* thinks, to the angle being more acute, and consequently the pressure on the medulla spinalis greater, when one bone only is thrown out of the range. This also accounts for the paralytic symptoms in some being less remarkable in the more advanced stages of the disease than they were at first; for although one bone only is displaced at first, yet one or both of the contiguous vertebræ almost constantly yield at last; and the difference arising from this is so great, that patients almost always linger and die in the course of a year or two, often in a less time, when one bone alone is deranged; while they live for a great length of time, frequently as long as if no such circumstance had occurred, when the curvature of the spine becomes more extended.

Paralytic affections from distortions occur in all ages; but more frequently about puberty than at any other period, and more commonly in girls than in boys. In general the effects that result

* See his *System of Surgery*, vol. vii. p. 213.

from them are observed before the cause is suspected; for there is seldom much pain in the part immediately affected. When distortion of the spine occurs during infancy, the patient appears to be suddenly deprived of the use of his limbs; but at more advanced periods, he complains first of feebleness and languor, and of numbness or want of feeling in the lower extremities. By degrees this want of sensibility is found to increase, and he is often observed to stumble, and to drag his legs, instead of lifting them properly; nor can he stand erect for any length of time without much difficulty. At last he loses the use of his legs entirely, which become altogether paralytic; and when the spine is distorted much forward, so as to compress the thoracic and abdominal viscera, he becomes distressed with dyspnœa, or with complaints in the stomach and bowels, according to the part of the spine that is diseased.

Palsy is to be distinguished from apoplexy by the pulse; which in the former disease is soft and slow, by the loss of sense and motion being only partial, by the absence of stertor, and likewise by the other symptoms.

When palsy attacks any vital part, such as the brain, heart, or lungs, it soon terminates fatally. When it arises as a consequence of apoplexy, it generally proves very difficult to cure. Paralytic affections of the lower extremities, ensuing from any injury done to the spinal marrow, by blows and other accidents, usually prove incurable. Palsy, although a dangerous disease in every instance, particularly at an advanced period of life, is sometimes removed by the occurrence of a diarrhœa or fever. A feeling of warmth, and a slight pricking pain, as if stung by ants, in the parts affected, with returning sensation and motion, are favourable symptoms.

The morbid appearances to be observed on dissection in palsy are pretty similar to those which are to be met with in apoplexy: hence collections of blood, and of serous fluids, are often found effused on the brain, but more frequently the latter, and in some instances the substance of this organ seems to have suffered an alteration. In palsy, as well as in apoplexy, the collection of extravasated fluid is generally on the opposite side of the brain to that which is affected.

When this disease arises in a young person of a full plethoric habit, comes on suddenly, and the head appears to be much affected, or seems to arise from the causes producing apoplexy, it will be advisable to take away some blood, by opening the jugular vein or temporal artery; after which it will be proper to give an active purgative, as advised under the head of Apoplexy; but in old age, or where palsy arises in a debilitated constitution, neither bleeding nor purging should be resorted to. Where costiveness prevails in such habits, it may be obviated by some stomachic laxative, such as the *tinctura rhei composita*.

In most cases, but particularly where the disease has arisen

in aged or decrepit persons, the external application of stimulants will be highly proper; wherefore the parts affected, as well as all along the spine, may be rubbed several times a day with flannels, or a flesh-brush impregnated with flour or essence of mustard, or else with the palms of the hand, and some kind of rubefacient liniment*: and, in addition to these remedies, we may recommend the application of warm fomentations, blisters, and sinapisms † to the palms of the hands and soles of the feet.

As a gentle stimulus to parts affected by paralysis, urtication may sometimes be used.

Warm bathing is a remedy which has been much employed in most cases of palsy, as an external stimulant. In those, however, which arise in sanguineous habits, from a congestion of blood in the vessels of the brain, its use would, in all probability, prove injurious, both by stimulating the solids and rarifying the fluids, and thereby becoming a stimulus to the sanguiferous system; but in those cases where palsy has arisen in consequence of the application of narcotic powers, diminished vital heat, or an enfeebled constitution, the use of warm bathing will be likely to prove highly beneficial. In palsy we ought therefore most cautiously to ascertain whether an increased or diminished degree of vital heat or action in the sanguiferous vessels is the cause of the disease. Whether the natural baths, such as those of Bath, in Somersetshire, &c., possess more efficacious qualities than the ordinary warm ones, seems a matter of doubt with many practitioners, as

* 1. R. Ol. Olivæ, f. ʒij.
— Terebinth. f. ʒj. M.
ft. Linimentum.

Vel,

2. R. Spirit. Camphoræ, f. ʒj.
Tinct. Cantharid. f. ʒij.

Liquor. Ammon. Subcarb. f. ʒss. M.

Vel,

3. R. Liniment. Ammon. Subcarbonat.
f. ʒxij.
Ol. Terebinth. f. ʒij. M.

ft. Linimentum.

Vel,

4. R. Liniment. Camph. Comp. f. ʒj.
Tinct. Cantharid. f. ʒij. M.

† 5. R. Semin. Sinap. Pulv.
Rad. Armoracæ Contus. āā ʒj.

Micæ Panis, aut Farin. Sem. Lin. ʒij.

Acidi Acetic. Dilut. q. s. M.

ft. Cataplasma, plantis pedum applicandum.

* 1. Take Olive Oil, two ounces.
Oil of Turpentine, one ounce.
Mix them for a Liniment.

Or,

2. Take Camphorated Spirit, one ounce.
Tincture of Spanish Fly, two drachms.
Solution of Subcarbonate of Ammonia, half an ounce.

Mix them.

Or,

3. Take Liniment of the Subcarbonate of Ammonia, twelve drachms.
Oil of Turpentine, three drachms.

Mix them.

Or,

4. Take Compound Camphor Liniment, one ounce.
Tincture of Spanish Fly, two drachms.

Mix them.

† 5. Take Mustard Seed, in Powder,
Horseradish, bruised, of each an ounce.
Crumb of Bread, or Linseed Meal, two ounces.
Diluted Acetic Acid, a sufficiency to form a cataplasm, which is to be applied to the soles of the feet.

the substances with which the former are impregnated are but trifling in point of quantity.

The late Dr. Heberden thought these waters were neither in any way detrimental, nor of the least use in palsy. Bath has indeed been for a great length of time a favourite place of resort for the paralytic, whether made so by debauchery, or any other cause of premature decay; but it is highly probable the fashionable springs of that crowded mart of health are not impregnated with the power of restoring lost energies, or bringing back the tide of ebbing animation*. When the Bath waters are used in palsy, they may be employed both in the form of bathing and pumping every other day, avoiding the latter on the head.

When a natural warm bath cannot be resorted to, an artificial one may be substituted: and this may be made by dissolving a proper quantity of the ferri sulphas in the water, and impregnating it with fixed air.

Electricity, both by sparks and shocks, is another remedy which is universally employed in the cure of the palsy as an external stimulant, and often with the most happy effect; but in using it, proper care should be taken to apply it only with a moderate force, as more is to be expected from its repetition than from employing it with violence; and likewise to confine its application to parts which are somewhat remote from the head, as in those cases which depend upon a compression of the brain, it might do injury, by acting on the vessels of this organ.

Galvanism is also a remedy from which advantages might probably be derived. Indeed some practitioners have gone so far as to declare, that they have experienced its effects in palsy to be superior to electricity. Dr. Bardsley tells us†, he has found it to succeed when the latter has failed. To both electrical and galvanic shocks, may be added exercise by frictions on the diseased limbs, either with the hand or a flesh-brush, together with every other means that can be devised to bring the muscles into action and restore the languid circulation; the hands and fingers should be opened and well rubbed frequently, and the arms be exercised with a pulley. The exercise of dumb-bells may be of great assistance also.

When the disease affects several different parts of the body, as in hemiplegia, or a paraplegia, we should use stimulants internally as well as externally. Those in most general use are mustard seed, horseradish, garlic, and volatile alkaline salts, or spirits, and æther, which may be taken agreeably to the prescription advised below‡.

* See Essay on Nervous Diseases, by John Reid, M.D.

† See his Medical Reports and Cases, p. 163.

‡ 6. R. Sem. Sinap. Alb. ʒj.
Capiat æger cochl. min. ij. ex
Aq. Frigid. cyatho bis terve in die.

‡ 6. Take White Mustard Seed, two tea-
spoonsful twice or thrice a day, washing
them down with a little cold water.

The *arnica montana* (leopard's bane) is a remedy* much recommended, and great advantages have been derived from it in paralytic and other affections depending upon a want of nervous energy.

- Vel,*
7. R Sem. Sinap. Alb. Contus.
Rad. Armoraciæ, āā ʒij.

Cort. Aurant. ʒss.

Aq. Fontan. Oij. Coque ad Oj.
Col. Fiat Decoctum, cujus sumat cyath. j.
amplum ter in die. Adde pro re nata,

Tinct. Valerian. Ammon. m xx.

Vel,
8. R Spirit. Ammon. Aromat. f. ʒj.

Sumat m x.—xx. pro dos. ter in die.

Vel,
9. R Tinct. Lav. Comp. f. ʒij.

Spirit. Ammon. Fœtid. f. ʒss. M.

Capiat m xvj.—xxvj. in quovis vehiculo appropriato.

Vel,
10. R Spirit. Armoraciæ Compos. f. ʒij.

——Ammon. Fœtid. m xvj.

Tinct. Valerian. f. ʒij.

Aq. Anethi, f. ʒj. M.
ft. Haustus, ter in die sumendus.

Vel,
11. R Ammon. Subcarbon. gr. vj.

Tinct. Cardam. Comp. f. ʒij.

Aq. Ment. Virid. f. ʒjss. M.

ft. Haustus, 6tis horis capiendus.

Vel,
12. R Spirit. Ammon. Aromat. f. ʒss.

Aq. Pimentæ, f. ʒx.
Tinct. Cinnam. C. f. ʒij. M.

ft. Haustus, sextis horis adhibendus.

* 13. R Flor. Arnica Mont. ʒij.—ʒiij.

Aq. Bullient. f. ʒx. Macera per
horam in vase clauso, et cola.

- Or,*
7. Take of Bruised Mustard Seed,
Horseradish Root, of each two
ounces.
Orange Peel bruised, half an
ounce.
Pure Water, two pints.
Boil them slowly until reduced to one pint,
then strain off the liquor, and let the pa-
tient take a wine-glassful three times a day,
adding occasionally,
Ammoniated Tincture of Vale-
rian, thirty drops.
Or,
8. Take Aromatic Ammoniated Spirit, one
ounce.
Of this, from fifteen to thirty drops may be
given for a dose thrice a day.
Or,
9. Take Compound Tincture of Lavender,
two drachms.
Fœtid Spirit of Ammonia, half an
ounce.
Mix them, and take from twenty-four to
fifty drops occasionally, in any suitable
vehicle.
Or,
10. Take Compound Spirit of Horse-
radish, two drachms.
Fœtid Spirit of Ammonia,
twenty-four drops.
Tincture of Valerian, two
drachms.
Dill Seed Water, one ounce.
Mix them for a draught, to be taken three
times a day.
Or,
11. Take Subcarbonate of Ammonia, six
grains.
Compound Tincture of Carda-
moms, two drachms.
Mint Water, one ounce and a
half.
Mix them, and let this draught be taken
every six hours.
Or,
12. Take Aromatic Ammoniated Spirit,
half a drachm.
Pimenta Water, ten drachms.
Compound Tincture of Cinna-
mon, two drachms.
Make these into a draught, to be taken as
frequently as the former.
* 13. Take Flowers of Leopard's Bane, two
or three drachms.
Boiling Water, ten ounces.
Let them infuse for an hour in a covered
vessel, then strain off the liquor.

Resinous substances, such as guaiacum and the turpentine, have sometimes been employed with advantage in palsy: but from being apt to prove too inflammatory, their use is by no means general in this disease.

When palsy has arisen in consequence of the system being enervated by any debilitating cause, besides applying stimulants externally, and likewise administering them internally, we should make use of tonics joined with aromatics, as advised under the head of Dyspepsia.

The arsenical solution is a remedy which promises some relief in this disease, particularly when confined to particular parts.

From the tonic and good effects of the nitrate of silver in epileptic affections, it has also been prescribed in cases of paralysis, and sometimes with great advantage. We may begin with the eighth of a grain at first, increasing the dose gradually every other day, until we get to three grains in the twenty-four hours.

The *nux vomica* is a medicine which has lately been given with benefit, it is said, in some cases of palsy. It will be best to begin with two grains, night and morning, in powder, combined with about ten grains of compound tragacanth, and to increase the dose every other day, by an additional half-grain, till it amounts to seven grains.

In that palsy of the lower extremities which is occasioned by a deformity of the spine, or which arises from a thickening of the ligaments that connect the vertebræ together, without any particular affection of the bones, the insertion of issues conjoined with a recumbent position (see *Scrofula*) have proved advantageous in many cases. The late Mr. Pott speaks highly of the effects of drains, placed as near as possible to the tumour. He recommends an issue to be opened with caustic on each side of the swelling, large enough to admit of a kidney-bean, and the bottom of the sore to be sprinkled from time to time with powder of cantharides.

My advice was some time ago requested on the case of a young lady about seventeen years of age, who had gradually lost all sense of feeling as well as motion in her lower extremities. The disease had then been of two years' standing; she had consulted two or three practitioners, and had gone through a course of the usual medicines, together with blistering and other stimulating external applications, and she had made trial both of warm and cold bathing; but all without avail. Independent of the paralytic affection in the lower extremities, she seemed to suffer no inconve-

R. Colati Liquoris, f. 3x.

Tinct. Card. C. f. 3ij.

Syrup. Zingib. f. 3j. M.
ft. Haustus, ter in die sumendus.

Take of the strained liquor, ten drachms.

Compound Tincture of Cardamoms, two drachms.

Syrup of Ginger, one drachm.

Mix them, and let this draught be taken thrice a day.

nience; her countenance was healthy, and her appetite good; she slept well, and felt no pain. She rode on horseback every day when the weather permitted, and when it did not, she went out in a carriage for the benefit of the air. Upon being informed of the history of the case, I immediately suspected that the disease was occasioned by some injury done to the spine, or that there was a thickening of the ligaments that connect the vertebræ together; and in this supposition I was confirmed by passing my hand down the lower extremity of the spine, making a proper pressure at the same time. I ordered issues to be inserted in the manner just advised, and had the satisfaction to see my patient soon recover the feeling in her feet, so as to be sensible when they touched the ground; and at the end of about three months she was capable of walking alone. I have every reason, however, to conclude that the disease was in the ligaments only, and that the bones of the spine were not affected. When the vertebræ are diseased, a complete cure, I am afraid, can seldom be obtained: but the symptoms may certainly be greatly mitigated, and the pressure upon the spinal marrow diminished, by exciting a discharge in the neighbourhood of the parts, and keeping the patient very much in a recumbent position.—See Scrofula.

Dr. Clutterbuck informs us, in a pamphlet published not very long ago, that he had found mercury to be an excellent antidote to lead, and that he had used it with the most happy effects in many instances of paralytic affections which had arisen among those who were employed in manufacturing the several preparations of lead, and in applying them to their respective uses. In confirmation of the success of the remedy, he has recited several cases which seem clearly to prove its utility; and he has likewise added a letter from the late Dr. Bradley, physician at the time to the Westminster Hospital, bearing testimony in favour of the use of mercury in such cases.

In the removal of those distressing and terrible symptoms which frequently result from exposure to saturnine emanations (see *Colica Pictonum*), the nitrate of silver has been in some cases employed with success*. The remedy was administered in doses of from one to five grains three or four times a day, preceded by a dose of castor oil. From the activity of its operation on the bowels it may be necessary to combine it occasionally with opium.

The paralysis, or loss of nervous power in particular limbs, which arises as a consequence of that painful and obstinate colic produced by the poison of lead, is found to be peculiarly relieved by a use of the Bath waters, more especially when applied externally, either generally or upon the part affected.

In the treatment of that species of palsy of the hands which is produced by the poison of lead, the use of an ingenious mechanical

* See London Medical Transactions of the College of Physicians, vol. v. art. 4.

contrivance, adapted to place the muscles in a favourable state, is highly recommended by a late writer*, and it appears also to have been employed by him with much advantage. It is a splint, made somewhat in the form of a battledore, to be fastened under the fore-arm, and continued to the extremities of the fingers. The object of the instrument is to take off the weight appended to the extremities of the muscles, under the idea that this weight is a principal object to the restoration of the muscular power. In the first trial which our author made, the splint was applied to the right arm only, and the result, we are told, was as follows:

In one month from the first application he had the satisfaction to find that the right hand was able to raise an eight ounce weight into a line with the fore-arm by the power of the extensor muscles; whereas at this time the left hand remained as perfectly paralytic as before. In five weeks more the extensor muscles of the right hand had regained their natural strength, but the left hand continued paralytic.

For the purpose of ascertaining how far this improvement could be conceived to have arisen from any change of the constitution, and not from the local mean which was used, it appears that he discharged the patient from under his care for one month, at the end of which time he returned to him with the left hand still perfectly paralytic, but the right hand enjoying its full and natural powers. The splint was then applied to the left hand, and in seven weeks the power of the extensor muscles of that hand was also perfectly restored.

The result of the experiment certainly places the use of this mechanical contrivance in a favourable light; but it is proper to observe, at the same time, that it failed in producing the desired effect in some cases of palsy which were not occasioned by the poison of lead.

In palsy the diet should be light, nutritive, and of a warm, aromatic nature. If the patient is able to walk, he should take such daily exercise as his strength will admit; but if deprived of the use of his legs, he ought then to be carried abroad in a carriage, or on horseback; and frictions with strong stimulants should frequently be applied to the parts affected. Flannels should be worn next to the skin, and all exposures to cold, damp, and moist air, ought carefully to be avoided. If possible, a warmer climate should be resorted to.

In those cases where the appetite fails, and the person sinks into a state of debility from the long continuance of the disease, it will be proper to employ the bark of cinchona, stomachic bitters, and other tonics, to strengthen the system, as advised in Dyspepsia.

The inhabitants of the East Indies are very subject to a species of palsy which is called barbers, but known by the natives under

* See Dr. Pemberton's Treatise on the Diseases of the Abdominal Viscera.

that of beriberii, a word signifying a sheep. The disease probably has received this denomination, because those who are seized with it have a tottering in the knees and a peculiar manner of walking, exhibiting to the fancy a representation of the gait of that animal.

It attacks both natives and strangers, especially during the rainy season, commencing in November and terminating in March or April, but is most violent on the Malabar coast. During this season the land winds issue every morning about sunrise from the neighbouring mountains with remarkable coolness; and such as are tempted by the serenity of the atmosphere to sleep exposed to these winds, are often suddenly seized with the disease.

Among the chief symptoms by which it is characterized, is a lassitude over the whole body. The motion and sensation, especially of the hands and feet, are languid and depraved. Sometimes only a part of the extremities are affected, and at others the whole of them. The speech is now and then so much obstructed, that the patient can scarcely pronounce a syllable articulately.

The disease seldom proves fatal; but the cure is generally tedious, and notwithstanding a use of the most powerful medicines, is said * seldom to be effected till after the shifting of the monsoons, unless the patients are removed to the coast of Coromandel, or to any place to the eastward of the Balagat mountains, where, by a change of air, they quickly recover.

The means principally employed by the native practitioners, however, are fomentations and baths made of aromatic herbs, together with strong frictions. The Indians likewise adopt earth-bathing by putting the patient into a hole dug in the ground, and covering him with sand up to his neck. This is performed in the middle of the day, and he remains there as long as he can bear the heat of the sand.

When the disease is chronic, and of long standing, sudorific medicines are proper; and therefore camphor, volatile salts, and gum guaiacum, are frequently given. To obviate costiveness, aloëtic purgatives must be interposed. Due exercise, either on horseback or by walking, will be necessary to restore the action and strength of the extremities, together with warmth, and frictions with rubefacients.

ORDER II.

ADYNAMIÆ.

A DIMINUTION or defect of vital power is the character of this order.

* See Dr. Lind on the Diseases of Warm Climates, p. 286.

SYNCOPE, OR FAINTING.

THIS disease consists in a decreased action, and sometimes total cessation of the pulse and respiration. It is sometimes preceded by anxiety about the præcordia, a sense of fulness ascending from the stomach towards the head, vertigo, or confusion of ideas, dimness of sight, and coldness of the extremities. Attacks of syncope are frequently attended with, or end in vomiting, and sometimes in convulsions, or in an epileptic fit.

The causes of this affection are sudden and violent emotions of the mind, pungent and other kinds of odours, derangement of the primæ viæ, debility from preceding disorders, defect of the stimulus of distention, as after blood-letting, hæmorrhage, or the operation of paracentesis in ascites; organic affection of the heart, or of the parts immediately connected with it, such as aneurism either of the heart itself, or of the arch of the aorta; ossification of the valves of the heart, or its large blood vessels, or polypi.

During the paroxysm, the nostrils are to be stimulated with volatile spirits or salts, and the face to be sprinkled with cold water. Where the disease arises as the consequence of a hæmorrhage, the patient should be placed in a recumbent posture, and in all cases a free admission of pure cool air should be allowed. If the disease arises as the consequence of debility or defective excitement, the system should be strengthened by the use of cinchona, sulphuric acid, stomachic bitters, and chalybeates, together with cold bathing.—(See Dyspepsia.) It need hardly be added, that avoiding the occasional causes, and removing them, if in our power, is a matter we should always keep in view.

VERTIGO, OR GIDDINESS IN THE HEAD.

VERTIGO proceeds most usually either from too great a fulness of blood in the vessels of the head, or is symptomatic of Dyspepsia, hypochondriasis, or hysteria.

The patient is seized on a sudden with a swimming in the head; every thing appears to him to go round, he staggers, and is in danger of falling down.

This complaint is attended with no danger, when it arises as a symptom of hysteria, or any other nervous disease; but when it takes place in consequence of an overfulness of blood in the vessels of the head, and is not timely relieved by proper evacuation, it may terminate in apoplexy or palsy.

Where vertigo prevails as a symptom of some nervous disease, recourse must be had to the medicines and remedies which are most suitable to the removal of the primary affection (see Hysteria and Dyspepsia): but where it is occasioned by an over-distention of the vessels of the head, either general or topical bleeding, by the application of several leeches to the temples, or the scarifi-

cator and cupping-glasses to the nape of the neck, the latter being the most certain, together with a frequent use of cooling purgatives, and a spare regimen, ought to be employed. Should the complaint not be removed by these means, scapulary issues will be advisable.

DYSPEPSIA, OR INDIGESTION.

THIS disease chiefly arises in persons between thirty and forty years of age, and is principally to be met with in those who devote much time to study, or who lead either a very sedentary or irregular life. A great singularity attendant on it is, that it may, and often does, continue a great length of time, without any aggravation or remission of the symptoms. The disease is a frequent attendant on chronic weakness.

In Dr. Parry's opinion*, idiopathic dyspepsia consists in a morbid fulness of the vessels of the villous coat of the stomach.

Great grief and uneasiness of mind, intense study, indolence, profuse evacuations, excess in venery, hard drinking, particularly of spirituous liquors, irregularity of life, too frequent a use of warm diluent liquors, and of tea, tobacco, opium, and other narcotics, immoderate repletion and over-distention of the stomach, very frequent rejection of the saliva, in consequence of smoking or chewing tobacco, or a diminution or interruption of the due secretion of it, a deficiency in the secretion of the bile, pancreatic or gastric juice, diseases of the liver and spleen, hysteria, hypochondriasis, and exposure to moist and cold air, when without exercise, are the causes which usually occasion dyspepsia. Every thing which diminishes the amount of nervous influence transmitted to the stomach, weakens the digestive action.

Unless where dyspepsia arises from slight inflammation and thickening of the coats of the stomach, and then exists as a primary disease, it is almost universally symptomatic of organic affection of the liver or spleen, and not an idiopathic disease; of which the practitioner may be convinced by paying due attention to the colour of the alvine and renal discharges, to the pasty or doughy feel of the skin, and the dingy pale hepatic hue of the countenance, that generally attend dyspepsia.

Scirrhus in the pyloric orifice, or outlet of the stomach, is very apt to take place in those who addict themselves to ardent spirits; and there are numerous glands at this part which, from such a practice, are liable to be affected, giving rise to a high degree of acidity in the stomach. Many, perhaps most of the diseases of the digestive organs, caused by various circumstances, consist in a weakness or atony of the affected parts, accompanied by a deficiency or depravity of the fluids secreted by them, and upon

* See his Elements of Pathology and Therapeutics.

the healthy qualities of which a right performance of the functions depends.

The state of the tongue is in general a pretty good criterion of a disordered state of the stomach, but it does not point out the kind and degree of that disorder. With a furred tongue, there is perceived a disagreeable taste in the morning, and the breath in many instances, notwithstanding the greatest care that can be taken, acquires an offensive smell. In consequence of continued disease, the cuticle of the tongue sometimes appears to have lost its usual colour, and to become permanently white.

In some states of depraved digestion, there is nearly a complete disrelish for food ; but still the appetite is not greatly impaired, as at the stated periods of the patient's meals he can eat heartily, although without much gratification. With hard drinkers nausea and vomiting frequently occur in the morning ; and in ruined constitutions there is an almost constant thirst, with feverishness, loss of appetite and strength, shortness of breath, paleness of the countenance, languor, and towards the close, anasarca swellings.

In stomach complaints, in addition to defective appetite, indigestion, flatulency in a high degree, acidity and cardiaglia, the patient is often afflicted with costiveness, vertigo, pain in the balls of the eyes, imperfect vision, ringing in the ears, and palpitations. The mind in such cases is frequently irritable and desponding, and great anxiety is observable in the countenance. The pulse is usually feeble and frequent, and slight exercise produces considerable fatigue and perspiration. Restlessness prevails at night, the sleep is disturbed by frightful dreams and startings, not affording much refreshment, and occasionally there is much moaning, with a sense of a heavy weight on the chest, or what has been denominated the night-mare. In some instances, the disease is complicated with gastrodynia, or severe pain in the stomach itself, and now and then with pyrosis.

Although dyspeptic complaints, when they exist in consequence of debility of the stomach, may be alleviated, or be entirely removed by timeously desisting from bad habits and taking proper medicines, still when they have been of long continuance, so as to produce great debility, and pass into some other disease, such as dropsy ; or when they originate from an organic affection, such for instance as a scirrhus of the pylorus, or ulceration of the coats of the stomach, they will be sure to prove fatal.

The morbid appearances to be observed on dissections of this disease, are principally confined to the liver, spleen, and that part of the stomach which is called the pylorus, this being often found either in a contracted, scirrhus, or ulcerated state. In every instance the stomach is perceived to be considerably distended with air, and occasionally its interior surface is beset with tubercles, or partially eroded.

In the case of habitual drunkards and hard drinkers, the coats of this viscus are often found thickened and indurated, and its

interior surface beset with small processes of a fungous appearance; the liver in general is much enlarged, and studded with tubercles, the spleen usually somewhat diminished in size, and the gall bladder pale and nearly empty.

In the treatment of hypochondriasis, three indications must be attended to:—

The first is to avoid or remove the remote causes which have been enumerated. A knowledge of the cause which has given rise to it, will point out the best means of relief.

The second is to obviate the symptoms which contribute to continue or aggravate the disease.

The third is to restore the tone of the organ, if possible.

To effect the first of these intentions, it must be the business of the physician to point out to the patient the indispensable necessity of renouncing such habits or pursuits as may have tended to give rise to the disease, as the continued application or frequent repetition of these causes may defeat the use of whatever remedies are employed.

If he leads a fashionable life, it will be necessary for him to forsake the haunts and habits of dissipation; to leave the crowded city, and its alluring amusements, conducted in rooms, where the air he breathes is vitiated and contaminated by the great number of persons collected together; to shun luxurious tables, indolence, and late hours; to retrace the footsteps by which he had deviated from simple nature, and to court the country, pure air, moderate exercise, early rising, simple diet, the society of a few select friends, and pleasing occupations.

To accomplish the second intention of obviating the symptoms which contribute to continue or to aggravate the disease, it will be necessary to remove the crudities in the stomach by giving a gentle emetic. It will also be necessary to correct the morbid acidity in the organ by alkalies and absorbents*, as the potassæ

* 1. R. Liquoris Calcis Oj.
Capiat æger, f. ʒij.—ʒiv. bis in die.

Vel,
2. R. Liquor. Potassæ, f. ʒj.
—— Calcis, f. ʒvij. M.

Capiat æger cochleare magnum bis in die ex poculo jusculi bovini.

Vel,
3. R. Magnesiæ, ʒij.
Pulv. Rhei, ʒj.
Aq. Fontan. f. ʒiv.
—— Cinnam. f. ʒj.
Tinct. Lavand. C. f. ʒss. M.

ft. Mistura, cujus sumat cochl. ij. ter in die.

Vel,
4. R. Cretæ Præparat. gr. xv.
Spirit. Myristicæ, f. ʒj.

* 1. Let the patient take from two to four ounces daily of Lime Water.

Or,
2. Take Solution of Potass, one drachm.
—— Lime, seven ounces.

Mix them, and take a table-spoonful twice a day in a little beef-tea.

Or,
3. Take Magnesia, three drachms.
Rhubarb in powder, one scruple.
Pure Water, four ounces.
Cinnamon Water, one ounce.
Compound Tincture of Lavender, half a drachm.

Of this mixture two table-spoonful may be taken three times a day.

Or,
4. Take Prepared Chalk, fifteen grains.
Spirit of Nutmeg, one drachm.

subcarbonas, liquor calcis, magnesia, chalk, &c.; to assuage the pain and flatulency in the stomach and intestines by carminatives*, antispasmodics†, and opiates; and, lastly, to obviate costiveness by a use of such gentle laxatives‡, joined with aromatics, as will promote a ready discharge of the contents of the intestines, without hurrying their action, or increasing the excretions made into their cavity. Friction with the hand over the region of the stomach and bowels every morning and night, might increase that effect; and where the patient is distressed with flatulency, may be regarded as a good auxiliary remedy.

Aq. Fontan. f. ℥jss.
Liquor. Potassæ, ℥x.
Syrup. Zingib. f. ℥ij. M.
ft. Haustus, bis die sumendus.

Vel,

5. R. Magnesiae, ℥ij.
Pulv. Rhei, gr. v.
— Nuc. Mosch. gr. iij. M.
ft. Pulvis, mane et vespere sumendus.

* 6. R. Cret. Præparat. gr. xij.
Aq. Ment. Pip. f. ℥ss.
— Font. f. ℥j.
Spirit. Pimentæ, f. ℥ij.
Tinct. Opii, ℥viiij. M.
ft. Haustus, ter die sumendus.

† 7. R. Aq. Anethi f. ℥ij.
Spirit. Cinnam. f. ℥j.
Tinct. Valerian. Ammon. f. ℥ij.

— Opii, ℥xxv.

Æther. Sulphuric. f. ℥j. M.

Capiat cochl. larga ij. bis terve in die, vel dolore ventriculi urgente.

‡ 8. R. Pil. Aloes cum Myrrh. gr. xv, in Pilulas iij. pro dos. divid.

Vel,

9. R. Aloes Spicatæ Extract.
Pulv. Rhei, aa ℥j.

— Cinnam. Comp. ℥j.

Sapon. Venet. ℥ss.

Syrup. q. s. M.

Fiat Massa in pilulas l. dividenda, quarum ij. sumat pro dos.

Vel,

10. R. Confect. Sennæ, ℥ij.

Pulv. Jalapæ, ℥ij.

— Cinnam. Com. ℥j.

Potassæ Supertart. ℥j.

Syrup. Zingib. q. s. M.

ft. Electuarium, cujus capiat quantitatem juglandis hora somni.

Pure Water, one ounce and a half.
Solution of Potass, fifteen drops.
Syrup of Ginger, two drachms.

Mix them, and let this draught be taken twice a day.

Or,

5. Take Magnesiae, two scruples.
Rhubarb in powder, five grains.
Powdered Nutmeg, three grains.

Mix them. This powder may be taken morning and evening.

* 6. Take Prepared Chalk, twelve grains.
Peppermint Water, half an ounce.
Pure Water, one ounce.
Spirit of Pimento, two drachms.
Tincture of Opium, twelve drops.

Mix them. This draught is to be taken three times a day.

† 7. Take Dill Water, three ounces.
Spirit of Cinnamon, one ounce.
Ammoniated Tincture of Valerian, two drachms.
Tincture of Opium, forty drops.
Sulphuric Æther, one drachm.

Mix them, and let two table-spoonsful be taken twice or thrice a day, or whenever the pain in the stomach is severe.

‡ 8. Take Aloetic Pills with Myrrh, fifteen grains.

Divide the mass into three pills for a dose.

Or,

9. Take Soccotrine Aloes,
Powdered Rhubarb, of each one drachm.

Compound Powder of Cinnamon, one scruple.

Hard Soap, half a drachm.

Syrup, a sufficiency to form the mass, which is to be divided into fifty pills, of which two will be a sufficient dose.

Or,

10. Take Confection of Senna, two ounces.
Jalap in Powder, two drachms.

Compound Powder of Cinnamon, one scruple.

Supertartrate of Potass, one drachm.

Syrup of Ginger, a sufficiency to form an electuary, of which take the bulk of a walnut at bed-time.

An habitual attention to the removal of costiveness by instituting a regular custom of periodically soliciting an evacuation by voluntary and persevering efforts, will powerfully aid the beneficial effects of the other means we employ. The morning is the proper time for the attempt; and the trial should be prosecuted during at least fifteen minutes, if the peristaltic be not earlier excited to adequate motion. Perhaps a week may be unavailingly employed in this endeavour, but the proposed effect will probably be attained within a month: one month has indeed in numerous instances fully established an habitual call to intestinal evacuation, under circumstances that previously required the almost daily use of aperient medicines.

Where dyspepsia is occasioned by defective biliary secretion, and is combined with a diseased state of the liver, spleen or biliary ducts, the stools indicating a want of due mixture of bile with them, we should employ the submuriate of mercury. A pill containing about two grains of this may be taken every third night, succeeded the next morning by an aperient draught composed of one ounce and a half of infusion of senna, with two or three drachms of sulphate of magnesia.

For the removing of cardialgia and vomiting which attend on dyspepsia, the application of a blister over the stomach often proves serviceable. In such cases, blisters invigorate the exertions of the arterial and lymphatic vessels of the skin, produce an increase of insensible perspiration and of cutaneous absorption, and augment the action of the stomach, and consequently its power of digestion.

To accomplish the third intention of restoring the tone of the stomach, the loss of which is to be considered as the chief and immediate cause of dyspepsia, we are to employ such medicines as operate directly on this organ, and such remedies, and other means, as have a tendency to strengthen the system in general.

The medicines best calculated to restore the tone of the stomach are aromatics and astringent bitters*, as likewise the

Vel,
11. R Tinct. Rhei, f. 3vj. pro dos.

Vel,
12. R Pulv. Rhei, ʒj.
—— Zingib. gr. v.
Magnesiæ, ʒss. M.
ft. Pulvis, pro re nata sumendus.

* 13. R Infus. Gentian. C. f. ʒjss.

Tinct. Card. C. f. ʒij.

—— Myrrh. f. ʒj. M.
ft. Haustus, bis terve de die adhibendus.

Vel,
14. R Infus. Rad. Calumb. f. 3x.

Or,
11. Take Tincture of Rhubarb, six drachms for a dose.

Or,
12. Take Powdered Rhubarb, one scruple.
—— Ginger, five grains.
Magnesia, half a drachm.

Mix them, and take this powder when necessary.

* 13. Take Compound Infusion of Gentian, one ounce and a half.
—— Tincture of Cardamon, two drachms.

Tincture of Myrrh, one drachm.
Mix them. This draught is to be given three times a day.

Or,
14. Take Infusion of Calumba Root, ten drachms.

cinchona bark*, the mineral acids, and chalybeates†. The latter, in particular, are of eminent service in an impaired or capricious

Tinct. Cascaril.

— Cort. Aurant, āā f. 3j. M.

ft. Haustus.

Vel,

15. R Quassia, 3ij.

Aq. Fervent. f. 3v.

Colat. adde

Tinct. Cascaril.

— Card. C. āā f. 3ss. M.

Capiat æger cochl. iij. ter in die.

Adde pro re nata

Acid Sulph. Dilut. ℥ xij.

Vel,

16. R Infus. Gentian. C. f. 3v.

Tinct. Cinnam. C. f. 3j.

— Lavand. C. 3j. M.

ft. Mistura.

Vel,

17. R Rad. Gentian. Contus. 3ss.

— Calam. Aromat. C.

Cardam. Sem. Contus. āā 3ij.

Cort. Aurant. Sic. C. 3ij.

Vin. Alb. Hispan. Oij. Infundantur
per dies octo.

Hujus Infusi capiat cochl. ij. bis quotidie.

* 18. R Decoct. Cinchonæ, f. 3jss.

Tinct. Calumb. f. 3ij.

— Myrrh. f. 3j. M.

ft. Haustus, ter in die sumendus.

Vel,

19. R Pulv. Cinchonæ, 3j.

Aq. Cinnam. f. 3jss.

Tinct. Gentian. C. 3ij.

Acid. Sulph. Dilut. ℥ xij. M.

ft. Haustus.

Vel,

20. R Infus. Cinchonæ, f. 3v.

Tinct. ejusd. C.

— Card. C. āā f. 3ss. M.

Sumat cochl. larg. iij. ter in die.

Adde pro re nata

Acid. Sulp. Dilut. ℥ xij.

+ 21. R Tinct. Ferri Muriat. f. 3ss.

℥ x. —xvj. ter die sumendæ in quovis
vehiculo.

Tincture of Cascarilla,

— of Orange Peel, of each
one drachm.

Mix them for a draught.

Or,

15. Take Infusion of Quassia, five ounces.

Tincture of Cascarilla,

Compound Tincture of Carda-
mon, of each half an ounce.

Of this mixture let the patient take three
table-spoonsful thrice a day, adding occa-
sionally twenty drops of Diluted Sulphuric
Acid.

Or,

16. Take Compound Infusion of Gentian,
five ounces.

— Tincture of Cinnamon,
one ounce.

— Lavender,
one drachm.

Mix them. The dose the same as the
former.

Or,

17. Take Gentian Root bruised, half an
ounce.

Sweet Flag Root, sliced,

Cardamon Seeds, bruised, of
each three drachms.

Orange Peel dried, two drachms.

White Wine, two pints.

Infuse them for eight days, and let the
patient take two table-spoonsful twice a
day.

* 18. Take Decoction of Peruvian Bark,
one ounce and a half.

Tinct. of Calumba, 2 drachms.

— Myrrh, one drachm.

Mix them, and take this draught thrice a day.

Or,

19. Take Powder of Peruvian Bark, one
drachm.

Cinnamon Water, one ounce and
a half.

Compound Tincture of Gentian,
two drachms.

Diluted Sulphuric Acid, twenty
drops.

Mix them for a draught.

Or,

20. Take Infusion of Peruvian Bark, five
ounces.

Compound Tincture of the same,
— Cardamons,

of each half an ounce.

Of this mixture three large spoonsful may be
taken thrice a day, adding occasionally, of
Diluted Sulphuric Acid, twenty drops.

+ 21. Take Muriated Tincture of Iron, fif-
teen to twenty-four drops thrice a day in
any vehicle.

appetite, and weakness of the assimilating organs, irregular digestion, flatulent distension of the abdomen, anxiety about the præcordia, difficult respiration from sympathy with the stomach, and occasional vomiting of viscid mucus.

Besides the vegetable bitters that we have long been accustomed to, two others have very lately been recommended and brought forward as deserving our notice. The one is the humulus lupulus, or common hop, different preparations of which, such as the powder, extract, and tincture, are to be procured at the shops of many druggists; the other is the radix rhataniæ, or rhatany root. This last, we are told by Dr. Reece*, who seems to have been the first to give it notoriety, has been found to invigorate

* See his Treatise on the Rhadix Rhataniæ.

- Vel,*
22. Aq. Chalybeatæ.
Vel,
23. R Vin. Ferri, f. 3ij.
Infus. Gentian. f. 3jss.
Tinct. Cascaril. f. 3j. M.
Pro haustu, bis terve in die sumendo.
- Vel,*
24. R Pulv. Myrrh. 3ss. Solve in
Spirit. Cinnam. f. 3ij. et adde
Aq. Pimentæ, f. 3j.
Ferri Sulphat. gr. iij.—vj.
Potassæ Subcarbon. gr. x. M.
ft. Haustus, ter die sumendus.
- Vel,*
25. R Extract. Cinchonæ,
Gentian. aa 3j.
Ferri Sulphat. 3ss.
Pulv. Myrrh. 3j.
Syrup. Zingib. q. s. M.
Fiant pilulæ lx. quarum iij. sumat bis terve
in die cum Infusi Cascarillæ Cort. f. 3ij.
- Vel,*
26. R Pulv. Cinchonæ, 3j.
Pulv. Myrrh. 3ij.
Cinnam. C. 3ss.
Ferri Subcarbonat. 3ij.
Syrup. Cort. Aurant. q. s. M.
ft. Electuarium, cujus quantitatem juglandis
sumat ter in die cum Infus. Quassia, 3ij.

- Or,*
22. Chalybeate Waters.
Or,
23. Take Wine of Iron, two drachms.
Infusion of Gentian, one ounce
and a half.
Tincture of Cascarilla, one
drachm.
Mix them for a draught, to be taken twice
or thrice a day.
- Or,*
24. Take Myrrh, half a drachm.
Dissolve it in Spirit of Cinna-
mon, two drachms; and add
Pimento Water, one ounce.
Sulphate of Iron, from three to
six grains.
Subcarbonate of Potass, ten
grains.
Mix them, and let this draught be taken
three times a day.
- Or,*
25. Take Extract of Peruvian Bark,
Gentian, of each one
drachm.
Sulphate of Iron, half a drachm.
Powdered Myrrh, one drachm.
Syrup of Ginger, a sufficiency
to form the mass, out of which sixty pills
are to be made, of which three are to be
taken twice or thrice a day, washing them
down with about two ounces of an Infu-
sion of Cascarilla Bark.
- Or,*
26. Take Powder of Peruvian Bark, one
ounce.
Powder of Myrrh, two drachms.
Compound Powder of Cinna-
mon, half a drachm.
Subcarbonate of Iron, two
drachms.
Syrup of Orange Peel, a suffi-
ciency to form an electuary, of which the
bulk of a walnut may be taken thrée times
a day, with two ounces of an Infusion of
Quassia.

the digestive organs, produce a relish for food, and promote digestion. He further mentions, that it is more grateful to the palate than cinchona bark, and that he has found it to succeed better. This has not, however, been the case in the trials which I have made of it; neither has it answered the expectations of most others who have administered it. An aromatic tincture* of it seems to be its best preparation.

In cardialgia, gastrodynia, pyrosis, and such other complaints of the stomach, the oxyd of bismuth is a remedy which has been employed with considerable advantage in a variety of instances†. The proper dose is from three to ten grains, with about twenty-five grains of gum tragacanth, repeated three times a day. It will be best, however, to begin with a dose of only three grains, increasing it gradually. The remedy is perfectly safe as well as useful. In dyspeptic cases accompanied by gastrodynia, prussic acid has been reported by some practitioners to be a remedy of considerable efficacy, particularly where there has existed at the same time some disease in the heart.

As a diminution of the due quantity of gastric juice is sometimes a cause of dyspepsia, it may not be improbable that in such cases the symptom may be relieved by supplying the patient with the gastric liquor of those animals whose food is most similar to that of man. Dr. Scott, in a thesis published some years ago, makes mention, that an Italian physician, finding every thing else fail in a dyspeptic case, had recourse to the gastric liquor of brutes, which proved completely successful.

To strengthen the system, whereby the powers of the stomach will be made stronger, the patient should take daily exercise on horseback, which will be preferable to walking, as being less fatiguing; he should breathe a pure, dry, and temperate air, rise early every morning, go soon to bed at night, lead a temperate life, adapt his dress to the climate and changes of the weather, and bathè frequently in cold water.

The use of a tepid bath of about 96 or 98 degrees of heat for half an hour every other day for two or three months, has, in many instances, proved of great service to dyspeptic persons. Indeed it would be best to begin with tepid bathing, and so reduce the temperature gradually. Tepid bathing communicates heat to

† See Memoirs of the London Medical Society, vol. v.
— Medical Reports, by Dr. Bardsley

* 27. R Rad. Rhatan. Contus. ʒij.
Cort. Aurant. Sic. C. ʒss.

— Canel. Alb. C. ʒjss.

Spirit. Rectificat. Ten. Oij.

Digere per dies decem et cola.

Sit dosis cochl. ij. minima bis in die ex
cyatho aquæ puræ.

* 27. Take Rhatany Root, bruised, two ounces.

Orange Peel, dried, half an ounce.

Canella Bark, bruised, one drachm and a half.

Proof Spirit, two pints.

Infuse them for ten days, then strain off the liquor. The dose may be two tea-spoonsful twice a day in a glass of water.

the system, and it likewise stimulates it, and causes absorption more than exhalation.

The mind is to be amused at the same time that the body is employed; hence it is that mineral waters, and places of public resort, have always been found very efficacious in alleviating dyspeptic complaints. Mineral waters are indeed of themselves powerful remedies in cases of dyspepsia; but their efficacy is greatly increased by drinking them at the spring, where the patient's mind being constantly engaged by the company and a great variety of amusements, he is sure to receive both hope and entertainment. The advantages of air, exercise, particularly on horseback, and agreeable prospects, admirably coincide, in most cases, with the general curative effect of the spring itself.

Buxton water is found of considerable service in removing many of the symptoms of defective digestion and derangement of the alimentary organs consequent to a life of high indulgence and intemperance. A judicious use of this simple remedy, Dr. Saunders* observes, will often relieve the distressing symptoms of heart-burn, flatulency, and sickness; and if persevered in, will increase the appetite, render the secretions more regular, and improve the general health and spirits, that are so intimately connected with the functions of the digestive organs. A spontaneous diarrhoea is sometimes a consequence of its use at first; but it is more common, especially in habits where the action of the bowels is naturally sluggish, for costiveness to come on during a course of this water, which must be remedied by laxative medicines.

In dyspeptic affections, spasms of the stomach or intestinal canal, and similar disorders, great benefit is derived from a use of Bath water; but it ought to be persisted in for a considerable length of time. Sir George Gibbs bears ample testimony to the benefit derived by dyspeptic patients from both the internal and external use of the Bath waters, and Dr. Falconer observes in his Treatise on these waters, that every medical practitioner of the place must have seen instances of persons labouring under want of appetite, pain and spasms of the stomach and bowels, together with other symptoms of depraved digestion, and want of power in the proper organs to perform their functions, joined to a great degree of weakness both of the body and spirits, much relieved by a use of the Bath waters. Dyspepsia, foulness of the stomach, bilious vomiting, acidity, heart-burn, and spasmodic pains in any part of the alimentary canal, are complaints in which a use of Seltzer water affords likewise great relief.

Pymont water is another remedy which may be advantageously used in all cases of debility, where the constitution requires an active tonic, and which at the same time does not excite a permanent heat. It increases the secretion of urine, and sometimes

* See his Treatise on Mineral Waters.

occasions a temporary eruption on the skin. It is of an agreeable, though strongly acidulated taste, and emits a large portion of gas, which affects those who drink it with a sensation somewhat resembling that produced by intoxication. The dose must vary according to circumstances, and the nature of the patient's complaint, but, in general, the quantity to be taken ought not to exceed three pints per day.

If a person residing in a warm climate should labour under chronic weakness for any length of time, he will act prudently in removing to a colder one before the disease becomes inveterate, and lays the foundation of some dangerous complaint. If his circumstances or business will not admit of such a change, he ought then to remove to the coolest situation that can be procured; or, in preference to remaining on shore, he may sleep on board of some vessel; and as often as opportunities offer he should make short voyages, as wonderful recoveries have been effected by sea air in cases of this nature.

The diet in dyspepsia ought to be nutritive and generous, consisting chiefly of animal food, on account of the disposition to acescency; and it should be taken every three or four hours, and never exceed a few ounces at any one time. Moreover, due care is to be taken to masticate it properly, in order that it may be reduced by comminution and salival commixture to a semi-fluid state. Instead of fermented bread, the patient should eat biscuit with his food. No diluent fluids should be taken at his meals, nor until some time after each repast, lest the solvent property of the mixed saliva should thereby be diminished; nor should the quantity of fluid taken at once ever exceed half a pint, nor be repeated oftener than at intervals of three hours. About half an hour before swallowing the portion of aliment proposed, brisk friction should be performed with a flesh-brush over the region of the stomach during some minutes, and a similar operation may follow the meal.

A moderate use of wine, such as Madeira or Sherry, ought to be allowed: but should these disagree with the patient, and become acid on his stomach, weak brandy and water may be substituted for ordinary drink. Under no other circumstances should a use of ardent spirits be resorted to; as by an indulgence in them, a habit imperceptibly steals on, before the person is aware of the consequences to which it leads. By too free a use of spirituous liquors obstructions in the principal organs ensue, the nervous system becomes blunted and depraved to every feeling, the energies of the mind suffer, loss of memory takes place, a train of nervous disorders come on, and an attack of jaundice, dropsy, or consumption, at length terminates existence.

In this progress, even the passages to the stomach lose their feeling, become indurated and callous; and the organ itself, taking on the same state, has its digestion impaired, and becomes unfit to prepare nourishment for the body. Pure wine, in a mode-

rate quantity, gently stimulates, increases the action of the heart and arteries, and augments the nervous energy over the whole body, communicates a serenity and ease of mind, a liveliness of imagination, and a powerful exertion of every faculty: but, on the other hand, if taken immoderately, these favourable appearances are changed, the powers of the nervous system are weakened, the mind is deranged, and in the end both motion and sensation are much impaired, if not lost.

In that species of chronic debility which is brought on by drinking spirituous or fermented liquors to excess, there is not much reason to expect a return to healthful vigour where the power of digestion is considerably destroyed; but in other cases, the person may probably recover his health by a prudent and gradual diminution of the quantity of spirits. In such a case, he should at first omit one-fourth of the quantity of spirit he has lately been accustomed to; and if in a fortnight his appetite increases, he should be advised to omit another fourth; but if he perceives that his digestion becomes more impaired, from the want of the usual quantity of spirituous potation, he should then be advised to continue as he is, and rather bear the ills he has, than risk the encounter of greater. Animal food, with or without spice, is at the same time to be recommended, as likewise the cinchona bark, with myrrh and steel between his meals. At night he may take half a grain or a grain of opium, with five or eight grains of rhubarb.

Various dyspeptic affections of the stomach are apt to arise in consequence of a stricture or strictures in the œsophagus, or tube through which the food is conveyed to it. In all such cases, a fair and sufficiently long trial should be made by the introduction, once or twice a day, of a bougie of a proper size, composed either of wax and oil spread on linen, or of the elastic gum, with the view of dilating, in a gradual manner, the strictured part of the tube. We should begin with a bougie of a moderate size, and, after a few days, lay it aside for one a little larger. Should the disease not yield to this means, it will be advisable to resort to the caustic bougie, managing it in the same manner as is recommended for the removal of strictures in the urethra. Some cases of stricture in the œsophagus are reported in Sir Everard Home's work*, which were successfully treated with caustic, having previously resisted all the other means which were adopted.

Nervous persons are apt to complain of atoms floating before the eyes, or what are termed *muscæ volitantes*: but for the treatment of these, I beg leave to refer to the succeeding disease.

* See his Practical Observations, &c. vol. i.

HYPOCHONDRIASIS, OR HYPOCHONDRIAC AFFECTION.

THIS disease, known likewise by the name of low spirits, or the vapours, is a certain state of the mind along with dyspepsia, wherein the greatest evils are apprehended upon the slightest grounds, and the worst consequences imagined from any unusual feeling even of a trifling kind; and in respect to such apprehensions and feelings, there is always the most obstinate belief and persuasion.

Hypochondriasis bears a strong resemblance to dyspepsia; but there is this difference between them, that the former prevails at an advanced period of life, and is more an affection of the mind than of the body; whereas the latter occurs principally from the age of puberty to that of 35, and depends chiefly on debility induced by various causes. Hypochondriasis may, moreover, be distinguished from dyspepsia by the languor, listlessness, want of resolution and activity, fear of death, and suspicious disposition being always present, and by the dyspeptic symptoms being often absent, or when present, they are in a much slighter degree.

Men of a melancholic temperament, whose minds are capable of great attention, and whose passions are not easily moved, are at an advanced period of life most liable to be attacked with this disease; and when it has once taken place, it goes on increasing as life advances, being usually most troublesome in the autumnal and winter seasons: which accounts for more acts of suicide being committed at these times of the year than any other.

The English have been accused as the nation of all others which is addicted to suicide; and perhaps this proneness ought more reasonably to be attributed to an indulgence in unhappiness and domestication of misery, from trivial circumstances, than to the influence of fogs, or the physical effects of coal fires, as have been assigned by foreigners.

Hypochondriasis seems to depend on a loss of energy in the brain, or on a torpid state of the nervous system, induced by various remote causes, such as close and intense study, long and serious attention to abstruse subjects, the constant remembrance of some material loss or disappointment which has occurred, great anxiety of mind, leading an inactive, indolent, or sedentary life, immoderate venery, or a use of crude, flatulent, or unwholesome food, being guilty of great irregularity and intemperance, and by long-continued evacuations.

The affections of the abdominal viscera with which this disease is usually complicated, have been often treated of as standing in the relation of causes, while, in reality, they should be arranged among its occasional symptoms. That such is really the case, is clearly proved by a consideration of the exciting causes of the disease, which operate upon the system through the medium of

the brain. These are the depressing passions, fear, grief, and despondency, habits of indolence quickly succeeding to a life of industry and employment, long-continued and excessive exertions of the intellectual faculties. The sympathetic derangements consequent on hypochondriasis, are not, however, confined to the abdominal viscera; for nothing is more common than to meet, in such cases, with palpitations of the heart, difficulty of respiration, and chronic cough.

Hypochondriasis and other nervous complaints are, through the medium of sympathy, scarcely less infectious (it is probable) than febrile diseases; and even persons naturally of a cheerful temper, by being long domesticated with those of a melancholic desponding cast, have been known to become decidedly and often deplorably dejected.

The hypochondriac affection is attended with inactivity, a want of resolution with respect to all undertakings, lowness and dejection of spirits, great despondency, and apprehension of evil upon the slightest grounds, and a dread of danger from any unusual feeling even of a trifling kind, together with flatulency in the stomach and bowels, acid eructations, costiveness, a copious discharge of pale urine, spasmodic pains in the head and other parts of the body, giddiness, dimness of sight, and palpitations. In short, it is attended with such a long train of symptoms, that it would fill many pages to enumerate them all, as there is no function or part of the body that does not suffer in its turn by its tyranny; the miserable patient indulges wild imaginations, and fancies that he labours under almost every disease; and with respect to these feelings and apprehensions, he entertains the most obstinate belief, being highly displeased if any attempt is made to reason with him on the absurdity of his persuasions.

There are few examples of hypochondriacal people who find themselves worse at night than in the morning: the generality of them, like most of those who are afflicted with any of the complaints styled nervous, are seemingly hurt by their sleep, little as it is; and the longer they happen to sleep the worse they are: they awake out of it with confusion, and do not come immediately to themselves; and when they do, they can think only of melancholy subjects, and feel the worst horrors of their disorder. This state continues till dinner, with very little abatement; after dinner they feel themselves a little revived; and at night the tide of their spirits returns, which being desirous to enjoy, and dreading their certain ebb when they lie down, they go late and with reluctance to bed.

In hysterical women the operations of the animal powers seem to be the most disturbed and perverted; but in men the mind is most affected; involuntary exclamations, faintings and convulsions of all sorts, being most common in women, and silent despair in men. Hence, perhaps, suicide occurs more frequently with men than among women.

As to the prognostic, the disease, if recent, is rather to be regarded as troublesome than dangerous; but if long continued, it is apt to produce scirrhi of the viscera, cachexy, dropsy, incurable melancholy, or madness.

On dissections of hypochondriacal persons, some of the abdominal viscera (particularly the liver and spleen), are usually found considerably enlarged. In some few instances, effusion, and a turgescence of the vessels, have been observed in the brain.

The indications of cure in this disease seem to be,

1st, To excite the nervous energy which has been depressed, and that particularly by attending to the state of the mind.

2dly, To remove or alleviate the symptoms which serve to continue and aggravate the disease.

3dly, To strengthen the alimentary canal and promote the secretions.

To answer the first of these indications, the patient's attention is to be engaged and diverted to other objects than his own feelings; he is to be directed to vary the scene frequently by going from one place to another; to associate as much as possible with agreeable cheerful company; to engage in such pursuits as will afford him moderate exercise in the open air, which gardening, riding on horseback, and field sports, as hunting and shooting, are particularly calculated to do; and by all means to avoid absolute idleness; but in doing this, all application to former studies, especially professional ones, is to be forbid: entertaining books will, however, be serviceable, as assisting to divert the mind from itself. Gardening is a pursuit highly proper for hypochondriacs, as it will keep the mind alert and the body in exercise: such as live in the country should therefore engage in it. In cities or large towns where this healthy recreation cannot be enjoyed, no better substitute can be employed than that of fitting up an apartment as a work-shop. Working in a cool and free atmosphere would prove a deliverance from that chilliness which for above half of our year so miserably persecutes the tender, and it might act equally as a charm on the ruffled spirits.

Hypochondriasis is far from being a metropolitan disease, as the multiplicity of external objects, which in a large capital are continually giving a new direction to the current of thought, is of course unfavourable to the uniformity and self-absorption of the melancholy. A residence, therefore, even in a large city, which affords objects of interest and motives of exertion, ought to be recommended to hypochondriacal or nervous patients, in preference to the most healthy situation in the country, where there is not enough to rouse the sluggishness or fill the vacuity of the mind.

Compassion, and not raillery, is to be bestowed on the hypochondriac, as the firm persuasion which he entertains will not allow his feelings to be treated as imaginary, nor his apprehension of danger to be considered as groundless, however the physician may be of opinion that it is the case in both respects. To gain his confidence, it will be necessary to attend to his complaints, as if they

were all real: and to satisfy him, it will by all means be advisable to give him some kind of innocent medicine or placebo, changing it from time to time whenever he expresses any disappointment of relief.

In the absence of every other diversion, even the swallowing of medicine may be a source of amusement. The times for taking the different draughts, or doses, are so many epochs in the chronology of a hypochondriac, which by dividing, help to conquer the tedium of his day. However sceptical a physician may be with regard to the inherent or permanent qualities of any medicine, it is his duty, perhaps, to take advantage of the tide of opinion; and he may honestly make use of his patient's credulity, in order to relieve him from the pressure of his disease, and render the partial weakness of his mind instrumental to the general restoration of his corporeal strength*.

The complaints of hypochondriacs should be treated by the physician as of real existence; and from whatever cause they may arise, it is his province to employ his art to subdue it; nor to ruffle an irritable mind by unseasonable levity, or expose a morbid sensibility to insult and reproach.

From the slow evacuation of the stomach in melancholic temperaments, acidity often prevails in a high degree with hypochondriacs; to obviate which, and answer the second indication of cure, it will be necessary for the patient to make use of absorbents and alkalies, as advised under the head of *Dyspepsia*.

Vomiting, though sometimes employed, is by no means suited to this disease.

Costiveness, which is another frequent symptom in hypochondriasis, is to be obviated by instituting a regular custom of periodically soliciting an evacuation by voluntary and persevering efforts once or twice a day at certain hours: and until the desired intention can be established in this way, some gentle laxative may be taken occasionally, as mentioned under the head of *Dyspepsia*.

Harrowgate water may be used with a fair prospect of advantage in correcting the obstinate costive habit of body that accompanies hypochondriasis; and this habit, when removed by mineral waters, appears to be less liable to return than when only the resinous and drastic cathartics are employed.

Flatulency is another constant attendant, and is to be prevented by making use of carminatives, essential oils, and spices, formulæ of which will likewise be found under the head of *Dyspepsia*.

Besides these affections, hypochondriacs are apt to be troubled with spasmodic pains in the head and stomach: to relieve which, it may be proper to employ such medicines as æther, musk, and opium, either given separately or combined together†.

* See Essay on Nervous Diseases, by John Reid, M. D.

† 1. R Spirit. Æther. Sulph. ℥ xx.—xxx.
pro dos.

† 1. Take Spirit of Sulphuric Æther, from
thirty to forty-five drops, for a
dose.

Assafœtida, castor, camphor, valerian, volatile salts, salt and oil of amber, are medicines which are likewise much employed in the cure of the disease : and, therefore, when the patient loses a confidence in the one, we can readily substitute another, hypochondriacs being seldom satisfied unless they are liberally supplied with some drug or other. Various forms of these remedies will be found under the heads of Hysteria and Epilepsy.

Nervous people are apt to be troubled with what are termed *muscæ volitantes* (atoms flying before the eyes), which, though harmless and slight, often excite alarm and apprehension on the part of such patients, and may be mistaken for amaurosis, or incipient cataract : but whenever the appearance of *muscæ volitantes* is unaccompanied with the sensation of a mist which more or less obscures the appearance of objects, we may safely conclude that it is not a symptom of cataract ; and whenever this appearance is not accompanied with a fixed state of the pupil, it may be safely inferred that it is not a symptom of *gutta serena* *.

The plan or cure for these *muscæ volitantes* is, to relieve the mind from intense application and from objects of anxiety, to clear the bowels by a brisk purgative, and then to give volatile medicines. Local bleeding, or any other debilitating treatment, is commonly injurious.

In hypochondriasis, as well as in most other nervous diseases, it is too much the custom with many to addict themselves to a frequent and immoderate use of opium, in some form or other : but this remedy should be carefully shunned, unless on urgent occasions ; for although it may afford some little relief for the

* See Medico-Chirurgical Transactions of London, vol. v. Essay 18th.

Vel,
2. R Misturæ Moschi, f. ʒiiss.

Spir. Æther. Sulphur. ʒ xx. M.

ft. Haustus, ter in die sumendus.

Vel,
3. R Infus. Gentian, C. f. ʒjss.

Tinct. Card. C. f. ʒij.

Spir. Æther. Sulphur. ʒ xxij.

Tinct. Opii, ʒ xj. M.

ft. Haustus.

Vel,
4. R Spir. Carui, f. ʒss.
Misturæ Camph. f. ʒv.
Spir. Æther. Sulph. f. ʒj.

Tinct. Opii, ʒ xxv.
— Lavand. C. f. ʒ xxx.

ft. Mistura, cujus sumat cochl. larg. ij. ter
quaterve die.

Or,
2. Take Musk Mixture, one ounce and a
half.
Spirit of Sulphuric Æther, thirty
drops.
Make them into a draught, to be taken
three times a day.
Or,
3. Take Compound Infusion of Gentian,
one ounce and a half.
Tincture of Cardamom,
two drachms.
Spirit of Sulphuric Æther, thirty-
five drops.
Tincture of Opium, sixteen drops.
Mix them for a draught.
Or,
4. Take Spirit of Carraway, half an ounce.
Camphor Mixture, five ounces.
Spirit of Sulphuric Æther, one
drachm.
Tincture of Opium, forty drops.
Compound Tincture of Lavender,
forty-five drops.
Mix them, and let two large spoonful be
taken three or four times a day.

present, it will nevertheless, by a constant use, greatly add to the disease. The immediate effect produced by opium upon such as addict themselves to its use is, that with an increase of the frequency of the pulse the heat of the body is generally somewhat augmented, so as to produce very often flushings in the face; and from a depressed state, they become active and alert, with an exhilaration of spirits; but after the operation of the remedy is over, depression of mind ensues, the body is cold and heavy, and in this dull and indolent condition it remains until the dose is repeated*.

The peculiar power which the citric acid possesses of counteracting the noxious effects of opium, is deserving of attention by those who accustom themselves to a regular use of this drug; and it has indeed been recommended by some physicians, that with every dose of opium a proportion of the juice of lemons, or oranges, in the quantity of two ounces to the grain of opium, should be taken: by this means the uneasiness which the medicine often occasions will be prevented, its depressing consequences avoided, and the tendency to constipation obviated. To a very free use of the vegetable acids is ascribed the slight effect which opium produces on the Turks, and not to the influence of coffee, as has been alleged by some. These people, as well as others of the Eastern nations, are in the habit of drinking daily large quantities of sherbet, which is a liquor composed of the juice of lemons or oranges, mixed with water and sugar.

From the quantity of acid in the composition of the black drop, a preparation of opium now much used, it will often stay upon the stomach when other preparations of this drug will not; and a long continued use of it may perhaps be less injurious to the constitution, from the same cause. The original recipe for the black drop (see Dr. Armstrong's Practical Illustrations of Typhus) is given below †.

Many of those who labour under a lowness of spirits, have recourse to wine, or other fermented liquors, and what is still worse, to spirituous ones, in order to raise them. The momentary relief so obtained is much too dearly bought by the far greater languor which succeeds: and the necessity of increasing the quantity of these liquors, in order to obtain the same effect, irrecoverably ruins the health, and this in the most miserable manner, as has been noticed under the head of Dyspepsia.

It is remarked by the judicious writer ‡ before alluded to, that the best way of attempting to conquer the vice of intemperance in another, especially when it has been induced (as very frequently is

* See the Confessions of an English Opium Eater.

† Take half a pound of opium sliced, three pints of good verjuice, one ounce and a half of nutmegs, half an ounce of saffron. Boil these to a proper thickness; then add a quarter of a pound of sugar, and two spoonfuls of yeast. Set the whole in a warm place near the fire for six or eight weeks; then place it in the open air until it becomes like a syrup. Lastly, decant, filter, and bottle it, adding a little sugar to each bottle. These ingredients, when properly mixed, should yield about two pints of the strained liquor. One drop of it is supposed to be equal to three drops of the tinctura opii of the London Pharmacopœia.

‡ See Essay on Nervous Diseases, by John Reid, M.D. p. 101.

the case) by some permanent or weighty cause of sorrow, is to picture to the mind of the patient the agreeable change in his situation which would be likely to arise from an alteration in his mode of life, rather than to present to him those deeper shades which must successively ensue from a continuance of his ignominious servitude and habits of fatal indulgence. The latter, though the more common mode of endeavouring to effect the reformation of an unfortunate inebriate, is in general calculated only to confirm and aggravate the evil, by sinking his spirits lower, and in some instances, perhaps, converting the languor of dejection into the mental palsy of despair.

It is not easy to determine whether the continued use of opium or of strong fermented liquors is most detrimental to the human constitution: unluckily the victims who addict themselves to either are ensnared by a habit which they find it impossible to relinquish, because the constitution, when habituated to a strong stimulus, becomes incapable of carrying on the functions of life without continual excitement, which of itself brings on debility and premature decay.

Grievous, however, as is the depression which takes place as the second effect of all fermented liquors, that which succeeds to the excitement produced by opium, in any shape, is still more intolerable. It is of course a task less difficult to refrain from the former than the latter, when the latter has been regularly applied to for temporary comfort or support, on a desertion or prostration of the spirits.

To answer the third indication of strengthening the alimentary canal, and promoting the secretions, a plaster of *pix abietina*, or of *cumini*, is to be applied to the abdomen; and *chalybeates* are to be employed, as advised under the head of *Dyspepsia*.

Mineral waters, particularly those of Bath and Tunbridge, have been used in hypochondriacal cases with infinite advantage to the patient, which perhaps may be attributed as much to the amusements and avocations accompanying the drinking of these waters at the spring, as to the tonic power they possess, from the small quantity of iron with which they are impregnated. Perhaps the elementary water, by favouring the excretions, may have a share in relieving the disease.

Bitters and astringents are generally supposed to be improper in hypochondriasis, because there is not a loss of tone, as in *dyspepsia*, but only a torpor, or want of activity. *Chalybeates*, however, may be advisable.

As a general stimulant, cold bathing may sometimes seem useful to the hypochondriac, as well as to the dyspeptic; but this does not often happen, as tepid bathing proves in general much more useful, from the rigidity of the solids which prevails. A bath of about 96 or 98 degrees of heat, used for half an hour once a day, or every other day, has in many instances proved of great service. Where a natural warm bath can be procured, a preference should be given to it.

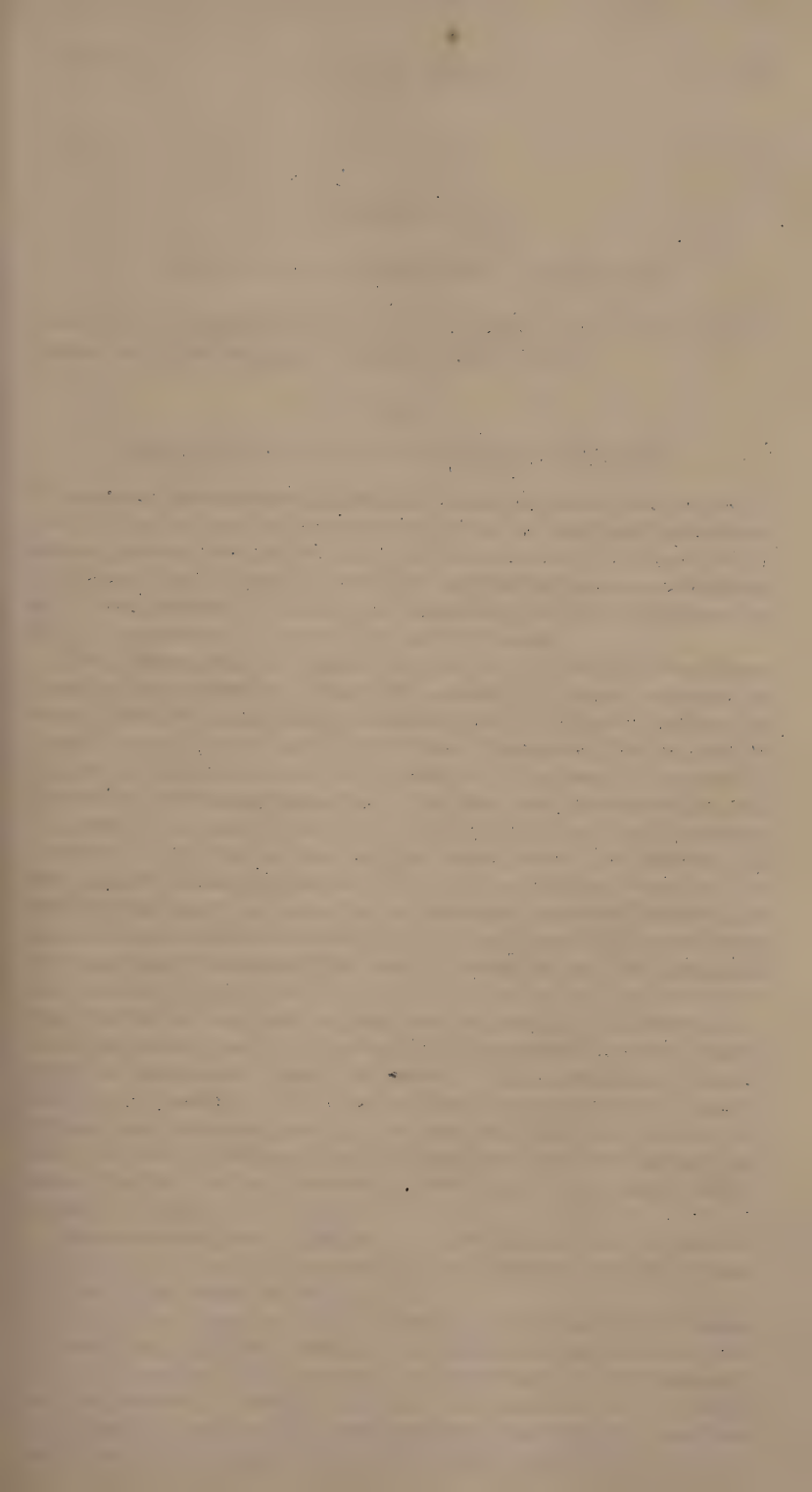
The use of a warm bath is generally resorted to with decided advantage by hypochondriac patients as a remedy for wakefulness, or broken and untranquil sleep, even when they had previously tried all the medicinal and dietetic opiates, as well as other methods for producing the same effect, without obtaining the object of their wishes.

Frictions of the whole body every morning and evening for ten minutes or longer, with coarse flannel cloths, will be likely to prove beneficial; and so will be also bodily exercise. For the cure as well as prevention of hypochondriasis, and other nervous affections, there is no means better adapted than bodily exercise in the open air; and a man suffering under a fit of the vapours will often find that by riding or walking, particularly in agreeable company, he will be able to remove it. The load upon his mind may be exonerated and removed by the continued agitation of his body.

Walking, no doubt, is best adapted to a state of unimpaired health or vigour; but for the feeble and hypochondriacal, or those who are affected by any visceral obstruction or disease, riding on horseback is for the most part preferable to any other kind of exercise. Instances not unfrequently occur of persons with broken spirits and apparently ruined constitutions, in whom an unexpected restoration to strength and cheerfulness has been effected by regular and daily horse exercise, when almost every other method of recovery had been tried without any sensible advantage. Nearly to live on horseback will be a good prescription for all nervous as well as bilious patients.

A person often indolently bends under the burden of hypochondriacal indisposition, which a spirited effort would at first have removed; and on this account I would strongly recommend that those who are labouring under this distressing evil should be stimulated to gradual exertion of all their faculties, both bodily and mental.

The diet in hypochondriasis should consist of what is light, generous, and nutritive, avoiding what is apt to prove either acescent or flatulent; and, therefore, animal food will be the most proper. The stomach ought never to be overloaded; neither should it be suffered to remain perfectly empty. If a faintness is perceived at any time between meals, a bit of cake or biscuit may be taken with a glass of wine; which precaution will be the more necessary with those in high life, from the late hour at which dinner is usually served up. Port wine, Sherry, or good Madeira, properly diluted with water, may be used for ordinary drink, instead of malt liquors; but should these disagree with the stomach, water with a small proportion of brandy may be drank in their stead. Tea and coffee are improper articles of diet for hypochondriacs; but more particularly when taken very warm. For breakfast, cocoa, chocolate, and infusions of aromatic herbs and roots, such as balm, sage, and ginger, may be substituted instead of these.



ORDER III.

SPASMI, OR SPASMODIC DISEASES.

IRREGULAR or preternatural motions of the muscles or muscular fibres are characteristic of this order of diseases.

HYSTERIA, OR THE HYSTERIC DISEASE.

THIS complaint appears under such various shapes, imitates so many other diseases, and is attended with such a variety of symptoms which denote the animal and vital functions to be considerably disordered, that it is difficult to give a just character or definition of it; and it is only by taking an assemblage of all its appearances that we can convey a proper idea of it to others.

The disease attacks in paroxysms or fits. These are sometimes preceded by dejection of spirits, anxiety of mind, effusion of tears, difficulty of breathing, sickness at the stomach, and palpitations at the heart; but it more usually happens that a pain is felt on the left side, about the flexure of the colon, with a sense of distension, advancing upwards till it gets into the stomach; and removing from thence into the throat, it occasions by its pressure a sensation as if a ball was lodged there, which by authors has been called *globus hystericus*. The disease having arrived at this height, the patient appears to be threatened with suffocation, becomes faint, and is affected with stupor and insensibility; while at the same time the trunk of the body is turned to and fro, the limbs are variously agitated, wild and irregular actions take place in the alternate fits of laughter, crying, and screaming; incoherent expressions are uttered, a temporary delirium prevails, and a frothy saliva is discharged from the mouth. The spasms at length abating, a quantity of wind is evacuated upwards, with frequent sighing and sobbing, and the woman recovers the exercise of sense and motion without any recollection of what has taken place during the fit; feeling, however, a severe pain in her head, and a soreness over her whole body.

In some cases there is little or no convulsive movement, and the person lies for some time seemingly in a state of profound sleep, without either sense or motion.

Hiccup is a symptom which likewise attends in some instances on the hysteric disease; and now and then it happens that a fit of hysteria consists of this alone. In some cases of this nature it has been known to continue for two or three days; during which it frequently seems as if it would suffocate the patient, and proceeds gradually weakening her, till it either goes off, or else occa-

sions death by suffocation : but this last is extremely rare. Besides hiccup, other slight spasmodic affections sometimes wholly form a fit of hysteria, which perhaps continue for a day or two, and then either go off of themselves, or are removed by the aid of medicine.

In some cases the patient is attacked with violent pains in the back, which extend from the spine to the sternum, and at length become fixed upon the region of the stomach, being evidently of a spasmodic nature, and often prevailing in so high a degree as to cause clammy sweats, a pale cadaverous look, coldness of the extremities, and a pulse hardly perceptible.

Hysteric affections occur more frequently in the single state of life than in the married, and most usually between the age of puberty and that of thirty-five years ; and they make their attack oftener about the period of menstruation than at any other.

They are readily excited in those who are subject to them by passions of the mind, and by every considerable emotion, especially when brought on by surprise : hence sudden joy, grief, fear, &c. are very apt to occasion them. They have also been known to arise from imitation and sympathy.

Women of a delicate habit, and whose nervous system is extremely sensible, are those who are most subject to hysteric affections ; and the habit which predisposes to their attacks is acquired by inactivity and a sedentary life, grief, anxiety of mind, late hours, dissipation, a suppression or obstruction of the menstrual flux, excessive evacuations, and the constant use of a low diet, or of crude unwholesome food. The disease is sometimes met with in the more delicate of the male sex.

Hysteria differs from hypochondriasis in the following particulars, and by paying attention to them we may always readily distinguish between them. Hysteria attacks the sanguine and plethoric ; comes on soon after the age of puberty ; makes its onset suddenly and violently, so as to deprive the patient of all sense and voluntary motion ; is accompanied with the sensation of a ball rising upwards in the throat, so as to threaten suffocation ; is attended usually with much spasmodic affection ; is more apt to terminate in epilepsy than in any other disease ; and on dissection its morbid appearances are confined principally to the uterus and ovaria.

The reverse happens in hypochondriasis. It attacks the melancholic ; seldom occurs till after the age of thirty-five ; comes on gradually ; is a tedious disease, and difficult to cure ; exerts its pernicious effects on the membranous canal of the intestines, as well by spasms as wind ; is more apt to terminate in melancholy or a low fever than in any other disease : and on dissection exhibits its morbid effects principally on the liver, spleen, and pancreas, which are often found in a hard, scirrhus, or other diseased state.

Another very material difference might be pointed out between

these two diseases, which is, that hysteria is much relieved by advancing in age, whereas hypochondriasis usually becomes aggravated.

The two diseases have often been confounded together; but, from duly considering the foregoing circumstances, it appears that a proper line of distinction should be drawn between them.

The hysteric passion likewise differs from syncope, as in this there is an entire cessation of the pulse, a contracted face, and a ghastly countenance; whereas in the uterine disorder there is often something of a colour, and the face is more expanded; there is likewise a pulse, though languid; and this state may continue two or three days, which never happens in syncope.

It also differs from apoplexy, in which the abolition of sense and voluntary motion is attended with a sort of snoring, great difficulty of breathing, and a quick pulse; which do not take place in hysteric cases.

It differs from epilepsy, in that this is supposed to arise in consequence of a distension of the vessels of the brain; whereas in hysteria, the spasmodic and convulsive motions arise from a turbulence of blood in the uterus, or in other parts of the genital system. Hysteria may be distinguished from epilepsy by the globus hystericus, by the great flow of limpid urine, by the sudden transitions from laughing to crying, and by the fear of death preceding and succeeding to the paroxysm.

However dreadful and alarming an hysteric fit may appear, still it is seldom accompanied with danger; and the disease never terminates fatally, unless it changes into epilepsy or mania, or the patient is in a very weak reduced state.

In the cure of hysteria two indications are to be attended to.

The first is to allay the spasmodic symptoms which constitute the fit; and

The second, to lessen the excitability of the nervous system, and strengthen the whole frame during the intermissions of the paroxysms.

The first of these indications is to be answered by bleeding, if the patient is young and plethoric, the pulse full, and the attack quite of a recent nature; but in weak and delicate constitutions, or where the disease has been of long standing, we should never have recourse to this operation.

During the fit it will be the safest practice to rouse the patient by applying burnt feathers, assafoetida, or volatile salts or spirits, to the nose; by rubbing the temples with æther, and by putting the feet into warm water. Dashing cold water over the extremities and face is sometimes attended with a good effect.

In case of costiveness, a laxative clyster, with an addition of assafoetida or castor, may be thrown up into the intestines. Where the fit continues for any length of time, I have seen very speedy and effectual relief afforded by administering clysters composed of

turpentine*. We may at the same time apply a small blister to the inside of each leg. During the fit, due care is to be taken that the patient sustains no injury from the violence of her struggles.

As soon as she is perceived to be capable of swallowing, some antispasmodic, as assafoetida, castor, ammoniated tincture of valerian, camphor, æther, &c., should be given to her frequently. Such medicines may either be administered separately, or be combined together, as in the formulæ below†. In those cases where the spasms are very violent and the fit of long duration, opium may be employed in addition to other antispasmodics. In common cases it will, however, be best to avoid its use, as it seldom fails to leave the patient remarkably low, particularly if long continued.

In cardialgic paroxysms of the hysteric kind, the liquor potassæ subcarbonatis, in doses of twenty drops, frequently repeated, has been found an excellent palliative remedy, and may therefore be prescribed.

- * 1. R Ol. Terebinth. f. 3ij.
Mucilag. Gum. Acac. f. 3ss.

Misceantur bene simul in mortario, et adde
Decoct. Avenæ, f. 3xi.

ft. Enema.

- † 2. R Misturæ Assafoetid. f. 3vj.
Tinct. Valerian. Ammon. f. 3ij.

Spir. Æther. Sulphuric. f. 3j. M.

ft. Mistura, cujus sumat ægra cochl. ij. larg.
sextis horis.

Vel,

3. R Tinct. Valerian. Ammon. f. 3j.

Spirit. Lavand. C. f. 3ij.

— Cinnam. f. 3ij.

Mistur. Camph. f. 3vj. M.

ft. Mistura, capiat cochl. ij. larg. pro dos. ter
quaterve in die.

Vel,

4. R Aq. Cinnam. f. 3jss.

Tinct. Castor. f. 3j.

Spirit. Ammon. Fœtid. ℥ xiv.

— Æther. Sulphuric. ℥ xx. M.

ft. Haustus, 4ta aut 6ta quaq. hora sumendus.

Vel,

5. R Spirit. Ammon. Fœtid. ℥ xv.—xx.
pro dos.

Vel,

6. R Spirit. Æther. Sulphuric. ℥ xx.—
xxx. in quovis vehiculo.

- * 1. Take Oil of Turpentine, three drachms.
Mucilage of Gum Acacia, half an
ounce.

Mix them well together in a mortar, and add
Thin Gruel, eleven ounces; for a
clyster.

- † 2. Take Mixture of Assafoetida, six ounces.
Ammoniated Tincture of Valerian,
two drachms.

Spirit of Sulphuric Æther, one
drachm.

Of this mixture the patient may take two
table-spoonsful every six hours.

Or,

3. Take Ammoniated Tincture of Valerian,
one drachm.

Compound Spirit of Lavender,
two drachms.

Spirit of Cinnamon, three drachms.
Camphor Mixture, six ounces.

Mix them, and let the dose be two table-
spoonsful three or four times a day.

Or,

4. Take Cinnamon Water, one ounce and
a half.

Tincture of Castor, one drachm.

Fetid Spirit of Ammonia, twenty-
two drops.

Spirit of Sulphuric Æther, thirty
drops.

Mix them for a draught, to be taken every
four or six hours.

Or,

5. Take Fetid Spirit of Ammonia, from
twenty-two to thirty drops for a dose.

Or,

6. Take Spirit of Sulphuric Æther, from
thirty to forty-five drops, in any
vehicle.

The second indication is to be answered by giving medicines, during the intermissions of the paroxysms, to strengthen the system, such as the cinchona bark, and other bitters, with the sulphuric acid, and chalybeates; proper formulæ of which have been inserted under the head of Dyspepsia; but if more agreeable to the practitioner, those mentioned here* may be substituted.

Mineral waters are found to be very efficacious in hysteric affections, and their powers may be greatly increased by proper exercise, particularly riding on horseback, together with early rising, a generous nutritive diet, cool dry air, and cold bathing.

In addition to these, the mind is to be kept constantly easy and cheerful, and, if possible, to be always engaged in some agreeable and interesting pursuit; for which reason watering-places are well adapted for those who are subject to hysteric affections, and particularly where they have taken their origin from grief, anxious thoughts, or other distresses of the mind.

If the stomach is affected at any time with crudities or bile, so as to excite nausea, a gentle emetic may be taken to remove it; or if there is a tendency to costiveness, it may be obviated by some gentle laxative, as advised under the head of Dyspepsia.

When hysteric affections arise from a suppression or obstruction of the menses, these evacuations must again be promoted by adopting the means recommended under those particular heads.

Hysterical women are often afflicted with slight spasmodic affections in various parts of the body, and particularly with cramps, which are most apt to seize them in bed, and when asleep. In mild cases of this nature, immersing the feet and legs in warm water will often be sufficient to remove them; but where the spasms are violent, and of some duration, we must attempt the cure by opiates, musk, æther, camphor, &c. internally, and by the warm bath and frictions with anodyne liniments externally.—See Tetanus.

In those cases where the stomach becomes affected with cramp, we must have recourse to considerable doses of æther combined

* 7. R Ferri Subcarbonat. gr. vj.
Extract. Cinchonæ, ʒj.

Syrupi, q. s. M.
ft. Bolus, bis in die sumendus, cum Infus.
Quassia, f. ʒij.

Vel,

8. R Extract. Cinchonæ,
Pulv. Myrrh. aa ʒj.

Ferri Sulphat. ʒss.

Ol. Carui, m̄ v.

Syrup. Zingib. q. s. M.

Fiant pilulæ xxxvj., quarum ij. capiat ægra
ter quaterve in die; superbibendo Infus.
Gentian, C. f. ʒij.

* 7. Take Subcarbonate of Iron, six grains.
Extract of Peruvian Bark, one
scruple.

Common Syrup, a sufficiency to
form a bolus, which may be taken twice a
day, washing it down with about two
ounces of an Infusion of Quassia.

Or,

8. Take Extract of Peruvian Bark,
Powdered Myrrh, of each one
drachm.

Sulphate of Iron, half a drachm.

Oil of Carraway, eight drops.

Syrup of Ginger, a sufficiency to
form the mass into thirty-six pills, of
which the patient may take two, three or
four times a day washing them down with
two ounces of the Compound Infusion of
Gentian.

with opium*. Its external region may likewise be anointed with a liniment of the same nature†. If the feet are cold, bottles filled with warm water should be applied to them. Throwing up an emollient clyster combined with the oleum terebinthinæ into the intestines may also be proper, particularly where costiveness accompanies the spasmodic affection of the stomach.

To lessen the irritability or excitability of the system, and produce permanent effects, some physicians have recommended a use of antispasmodics along with tonics. The undermentioned formulæ‡ may be advised on the occasion, the patient washing them down with a little valerian tea.

From the great disposition of the stomach to acescency in this disease, as well as in hypochondriasis, a diet chiefly of animal food will be most proper. Wine diluted with a sufficient quantity of water should be preferred to all other liquors for common drink.

EPILEPSIA, OR EPILEPSY.

THIS disease consists in a sudden deprivation of the senses, accompanied with a violent convulsive motion of the whole body.

It attacks by fits, which after a certain duration go off, leaving the person most commonly in his usual state; but sometimes a considerable degree of stupor and weakness remains behind, parti-

* 9. R Aq. Cinnam. f. ʒj.
Spir. Æther. Sulphuric. f. ʒj.

— Carui, f. ʒss.

Tinct. Opii, m̄ viij.

— Castor. f. ʒss.

ft. Haustus, ter quaterve die capiendus.

† 10. R Spirit. Camphoræ, f. ʒij.
Tinct. Opii, f. ʒss.

Spirit. Æther. Sulphuric. f. ʒij. M.

ft. Embrocatio.

‡ 11. R Moschi, gr. vi.
Camphoræ, gr. ij.
Extract. Cinchon. ʒss.

Syrup. q. s. M.

ft. Bolus, bis terve die sumendus.

Vcl,

12. R Pulv. Myrrh.
Castor. aa ʒj.
Ferri Sulphat. ʒj.
Extract. Anthemidis, ʒss.

Ol. Succin. m̄ v.

Syrup. Simpl. q. s. M.

Fiant pilul. xxxvj., quarum ij. capiat ægramane et horâ decubitûs, cum cochl. ij. magnis Infusi Rad. Calumbæ.

* 9. Take Cinnamon Water, one ounce.
Spirit of Sulphuric Æther, one drachm.

— Carraway, half an ounce.

Tincture of Opium, twelve drops.

— Castor, half a drachm.

Mix them, and let the draught be taken three or four times a day.

† 10. Take Camphorated Spirit, two ounces.
Tincture of Opium, half an ounce.

Spirit of Sulphuric Æther, three drachms.

Mix them for an-embrocation.

‡ 11. Take Musk, six grains.
Camphor, three grains.
Extract of Peruvian Bark, ten grains.

Syrup, a sufficiency to form a bolus, which is to be taken twice or thrice a day.

Or,

12. Take Powdered Myrrh,
Castor, of each one drachm.
Sulphate of Iron, one scruple.
Extract of Chamomile, half a drachm.

Oil of Amber, eight drops.

Common Syrup, a sufficiency to form the mass. Divide this into thirty-six pills, and let the patient take three night and morning, with two table-spoonsful of an Infusion of Calumba Root.

cularly where the disease has frequent recurrences. It is oftener met with among children than grown persons, and boys seem more subject to its attacks than girls. Its returns are periodical, and its paroxysms commence more frequently in the night than in the day, being somewhat connected with sleep. It is a disease sometimes counterfeited, in order to extort charity or excite commiseration.

The only disease with which epilepsy can be confounded, is hysteria, and from this it may readily be distinguished, by the foaming at the mouth, gnashing of the teeth, blackness of the countenance, &c., together with the speedy termination of the fit in sleep, and the absence of the usual symptoms of hysteria, such as the globus hystericus, palpitations of the heart, involuntary laughing or weeping, and other symptoms usually described in the histories of that disease.

Occasionally we meet with epilepsy in combination with mania.

Epilepsy is properly distinguished into sympathic and idiopathic; being considered as sympathic, when produced by an affection in some other part of the body, such as acidities in the stomach, worms, teething, &c.; and idiopathic, when it is a primary disease, neither dependent on, nor proceeding from any other.

The causes which give rise to epilepsy are blows, wounds, fractures, and other injuries done to the head by external violence, together with plethora of the vessels of the head, lodgments of water in the brain, tumours, concretions, polypi, and a deformity in the shape of the bones in any interior part of the skull. Epilepsy has also been known to arise from an affection of the spinal marrow; and it is to inflammation in that part, of a more chronic form, that those shaking palsies, which are attended with pain, have been imputed. Violent affections of the nervous system, sudden frights, fits of passion, great emotions of the mind, frequent intoxications, acute pains in any part, worms in the stomach or intestines, teething, the suppression of some long-accustomed evacuation, too great emptiness or repletion, and poisons received into the body, are causes which likewise produce epilepsy. Sometimes it is hereditary, and at others it depends on a predisposition arising from a mobility of the sensorium, which is occasioned either by plethora or a state of debility.

We are told by Dr. Parry*, that whatever may be the primary cause of epilepsy, it usually depends immediately on excessive impetus of blood in the vessels of the brain.

An attack of epilepsy is now and then preceded by a heavy pain in the head, dimness of sight, noise in the ears, palpitations, flatulency in the stomach and intestines, weariness, and a small degree of stupor, and in a few cases there prevails a sense of something like a cold vapour or aura rising up to the head; but it

* See his *Elements of Pathology and Therapeutics*.

more generally happens, that the patient falls down suddenly without much previous notice; his eyes are distorted or inverted, so as that only the whites of them can be seen; his fingers are closely clenched; his limbs and the trunk of his body, particularly on one side, are much agitated; he foams at the mouth, and thrusts out the tongue, which often suffers great injury from the muscles of the lower jaw being also affected; he loses all sense of feeling, and not unfrequently voids both urine and fæces involuntarily.

After a continuance of the convulsions for some time, they abate gradually, and the patient continues for a short period in a state of insensibility, but on coming to himself, feels very languid and exhausted, and retains not the smallest recollection of what has passed during the fit.

When the disease proceeds either from tumours, polypi, concretions, or a deformity in the bones of the skull, the case is hopeless. When it arises from an hereditary disposition, or comes on after the age of puberty, or where the fits recur frequently and have become habitual, or are of long duration, it will be very difficult to effect a cure; but when it attacks at an early age, and is occasioned by worms or any accidental cause, it may in general be removed. In some cases it has been entirely carried off by the recurrence of a fever, or by the appearance of the menses, or of a cutaneous eruption. It has been known to terminate in apoplexy, and in some instances to produce mental derangement, or a loss of the powers of the mind, and so to end in idiotism.

Epilepsy has been perceived to disappear suddenly about the age of puberty where it has attacked children of five or six years old, and where no treatment has had any effect. The number of fits are always increased by parturition, and by every other thing which has a tendency to debilitate the system.

The appearances usually to be observed on dissection are, serous and sanguineous effusion, a turgid tense state of the vessels of the brain without any effusion, a dilatation of some particular part of the brain, excrescences, polypi, and hydatids adhering to it, obstructing its functions, and likewise ulcerations. In some instances the pituitary gland is found in a diseased state, even when every other part of the brain has appeared natural. In numerous dissections the spinal cord has been found more or less diseased.

In epilepsy the intentions of cure should vary according to the cause which occasions the disease.

When it is sympathetic, and arises from worms, medicines possessed of the power of destroying or dislodging these vermin ought to be employed. As an anthelmintic, the oil of turpentine has been found a very useful medicine in some cases of epileptic fits. It may be administered in the form of emulsion, prepared by diffusing the oil by means of honey or mucilage, in some strong aromatic water, and about half an ounce of this, containing

a drachm of the oil, may be taken three times a day in a teacupful of milk. When they proceed from teething, that part of the gum which appears to be inflamed should be deeply scarified, the body be kept open by laxative medicines or emollient clysters, and the feet be bathed in warm water. When cases occur without any symptom of direct pressure on the brain, and there is occasional sickness attended with flatulency, disturbed sleep, and other marks of disordered digestion, either preceding or following epileptic paroxysms, it will be right, especially in the former case, to evacuate the contents of the stomach by an emetic, consisting of a solution of the sulphate of zinc in an aqueous infusion of ipecacuanha, and to repeat it in six, eight, or ten days, according to circumstances *. The dose must vary according to the age of the patient, and the different degrees of irritability of the stomach, as no general rule can apply to every case.

Afterwards, if the stomach should exhibit marks of weakness, light bitter infusions may be given, assisted by some active stimulant, as ammonia or oleum cajeputi.

When there is a great prevalence of acid, from the imperfect digestion of vegetable food, soda, liquor potassæ, or liquor potassæ subcarbonatis, may be combined with the bitter.

If the bowels are confined at the same time, magnesia may be employed advantageously. On the contrary, if too much relaxed, which is seldom the case, cretaceous preparations may be resorted to.

If epilepsy appears to proceed from any suppressed discharge, in particular the bleeding piles, leeches should be applied to the hæmorrhoidal vessels together with fomentations, and we should at the same time administer aloëtic cathartics.

Where it attacks children of a costive habit, and seems to take its rise merely from a foulness of the bowels, active purgatives should be employed. A combination of the submuriate of mercury and jalap will be very proper.

If it arises from any stimulus, which by exciting pain occasions the complaint, this ought to be removed as quickly as possible. If it is a case of sympathetic epilepsy, and is accompanied with the aura epileptica, we should then endeavour to destroy the part, either by cutting it out, or by applying caustic to it; and when these means cannot be adopted, we ought then to endeavour to correct the morbid affection in it, either by blisters or by inserting an issue in the part.

Should the disease seem to proceed from the partial division of a nerve, and it can be got at readily, we ought to cut through it in the same manner as in tetanus. Cutting off the communication with the brain has likewise been attempted by the application of ligatures upon the limb, above the part from which the aura arises. A case which was successfully treated in this way,

* See Dr. J. Clarke on the Diseases of Children.

is recorded by Mr. Adolphus T. Leoffler, Professor at Altena, in his *Observations on Medicine and Surgery*. An epileptic patient felt, on every attack, a sense of coldness at the sole of the foot, and which gradually ascended till it reached the head. It occurred to the Professor to make a strong ligature above the knee of the affected limb, before the cold sensation had proceeded so high. The method succeeded; and as often as he took this precaution sufficiently early, he prevented the attack from taking place.

In the idiopathic epilepsy, the cure consists in avoiding the occasional causes and in removing or correcting those which predispose to it.

The occasional causes which are to be avoided, are over-distension, turgescence, intoxication, fits of passion, and all other emotions of the mind; and as the disease is confirmed by repetition and habit, so the avoiding frequent recurrences of it is of the utmost importance.

It is a fact well supported, that in some instances the disease has been found to continue from custom alone, after the original cause had long ceased to act. In such cases, our endeavours should be exerted to make nature discontinue this custom if possible. When an attack can be foreseen, no medicine, perhaps, under such circumstances, will be more likely to prevent an epileptic fit, than an emetic given about an hour before its approach. Removing to another country, and changing former habits and the manner of living, may likewise be serviceable in such cases.

If the predisposition to the disease has arisen from a plethoric state of the system, or from a turgescence in the vessels of the head, this is to be obviated by bleeding, both generally and topically, but more particularly the latter; by an abstemious diet and proper exercise, and by issues between the scapulæ, or a seton in the neck. These last may not only be supposed to be good remedies for obviating the plethoric state of the system, but may likewise be the means of determining occasional turgescences to such places, and therefore of diverting them, in some measure, from their action upon the brain. In those cases where, from frequent paroxysms, a morbid condition of the encephalon has prevailed, the insertion of a seton in the neck has been attended with a very happy effect.

In some dissections of those who have been destroyed by epilepsy, the spinal cord towards the upper part having been found now and then diseased, the insertion of issues on each side of the spinous processes of the cervical vertebræ (one of them near the occiput, the other about the commencement of the dorsal vertebræ,) has been attended with success after a failure of all other remedies. Some of the French surgeons have applied moxa to the spine, and this with considerable success, it is asserted.

In some cases of epilepsy, the patient lies in a comatose state after the paroxysm of convulsion has ceased, owing to a violent

determination of blood to the head, his breathing is stertorous with foaming at the mouth, and the pulse is full, hard, and beating one hundred in a minute. In such cases, bleed to the extent of twenty ounces or more, order cold applications to the forehead, temples, and head, and evacuate the bowels freely by a powerful dose of some active purgative, assisted by an enema of the same nature. If these means do not restore the patient to a state of sensibility, repeat the bleeding again, apply leeches to the temples, and a large blister to the neck, or between the shoulders.

Epilepsy is one of the diseases in which the digitalis has been found serviceable, but most so in those cases where a plethoric state or turgescence in the vessels of the head prevails. To produce, however, a permanent effect, the constitution must be kept under its influence for some weeks, by giving from half a grain to one grain of the powder, or from fifteen to thirty drops of the tincture, three or four times a day. Under the head of Mania, I have mentioned a severe case of epilepsy in a middle-aged married woman, accompanied with mental derangement, wherein, by administering the digitalis in the manner just noticed, and carefully guarding against the exciting cause (frequent intoxication), a complete cure was effected.

When the predisposition is owing to a state of debility, which is sometimes the case, we are to obviate and prevent its effects by recommending the patient to breathe a cool air, to make use of a generous nutritive diet, to take daily exercise adapted to his strength, particularly on horseback, and to go frequently into a cold bath: and besides adopting these steps, he may enter on a regular course of antispasmodic, astringent, and tonic medicines.

The antispasmodics in most general use are, valerian, castor, musk, æther, oil of amber, oleum cajeputæ, arnica montana, belladonna, hyoscyamus, digitalis, and opium, all of which may be given, as advised under the heads of Hysteria, Hypochondriasis, and Palsy, or as prescribed below*. A combination† of opium and

* 1. R Aq. Anethi, f. ℥jss.
Tinct. Valer. Ammon. ℥ xx.

— Castor. f. 3j.
Spirit. Æther. Sulphuric. ℥ xx. M.

ft. Haustus, bis terve die sumendus.

Vel,
2. R Infus. Cort. Cascaril. f. ℥jss.

Tinct. Valerian. Ammon. ℥ xx.

— Calumb. f. 3ij.
— Hyoscyami, ℥ xv. M.

ft. Haustus.

† 3. R Moschi,
Castorei, āā gr. x.
Opīi, gr. ss.

* 1. Take Dill Water, one ounce and a half.
Ammoniated Tincture of Valerian,
thirty drops.

Tincture of Castor, one drachm.
Spirit of Sulphuric Æther, thirty
drops.

Mix them for a draught, to be taken twice
or thrice a day.

Or,

2. Take Infusion of Cascarilla Bark, one
ounce and a half.

Ammoniated Tincture of Valerian,
thirty drops.

Tincture of Calumba, two drachms.
— Henbane, 22 drops.

Mix them for a draught.

† 3. Take Musk,
Castor, of each ten grains.
Opium, half a grain.

valerian, or of opium and musk, will be likely to prove valuable remedies. In particular they should be given a short time before the expected return of the paroxysm, and be repeated at proper intervals, increasing the dose in a gradual manner, in proportion to the violence or frequent recurrence of the fits.

Where the disease depends upon a plethoric state, it would be highly improper to give opium; but where no plethora exists, and it seems to depend upon irritation or increased excitement, opium will prove a safe and powerful remedy. When given in a large dose such as two grains in substance, or sixty or seventy drops in tincture, on the approach of a fit, it has been known to prevent it altogether; but should it even fail in this, it will infallibly be found to lessen its violence.

If the stomach rejects the internal use of opium, its external application may possibly be resorted to with much advantage, and it may likewise be employed in this way during the convulsions. The whole spine of the back may be moistened with tinctura opii; or a liniment, consisting of six grains of pure opium well triturated with a little prepared lard, may be rubbed in.

The astrigent medicine most celebrated formerly in the cure of epilepsy, was the misletoe, or viscus quercinus. It was given in doses of from half a drachm to a drachm of the powder, or about an ounce of the infusion repeated twice a day. It was indeed looked upon by many more as an object of superstition than of real utility, and for many years past has experienced almost total neglect. A modern writer on epilepsy* speaks, however, highly in its favour, and has recited several cases which were radically cured by it.

As a tonic, the cinchona bark has been much employed in the cure of this disease. Its use seems, however, best adapted to those epilepsies which recur at certain periods, and which are without plethora; in which cases, if it be given in a considerable quantity, some little time before the expected recurrence, it will be very likely to prove serviceable. When taken for a constancy, it may be combined with valerian, &c., as below †.

* See Dr. Henry Fraser's Treatise on this Disease.

Confect. Rosæ, q. s. M.
ft. Bolus, 6ta qua. hora capiendus.

Vel,

4. R Ol. Succin. f. ʒss.

Tinct. Opii, f. 3ij. M.

Guttæ viginti bis terve in die sumendæ
ex cyatho aquæ puræ.

† 5. R Decoct. Cinchon. f. 3x.

Tinct. ejusdem C. f. 3ij.

—Valerian. Ammon. f. 3ss. M.

Pro haustu, ter in die sumendo.

Confection of Roses, a sufficiency
to form a bolus, which may be taken every
six hours.

Or,

4. Take Oil of Amber, half an ounce.

Tincture of Opium, two drachms.

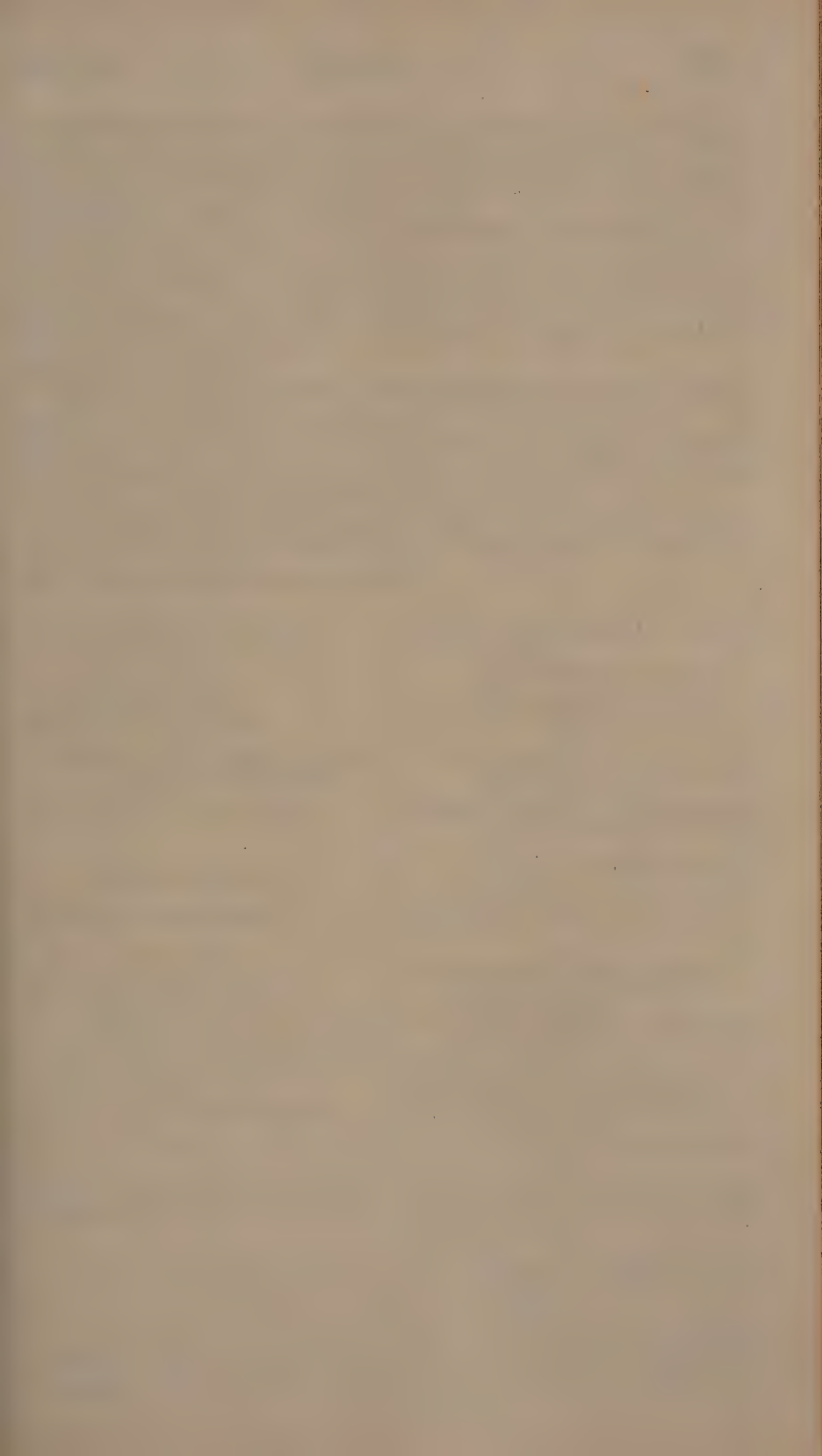
Mix them, and take twenty drops twice or
thrice a day in a little water.

† 5. Take Decoction of Peruvian Bark, ten
drachms.

Compound Tincture of the same,
two drachms.

Ammoniated Tincture of Valerian,
thirty drops.

Mix these for a draught, to be taken thrice a
day.



Metallic tonics having been found more powerful than the vegetable ones, have therefore been more generally employed. The preparations of iron most used are, the ferri sulphas, the ferrum ammoniatum*, and the ferri subcarbonas. Those of copper are the cuprum ammoniatum of the Edinburgh Dispensatory, and the cupri sulphas, which† may be given in small doses at first, repeated twice a day, increasing them gradually to as much as the stomach will bear. The pulvis stanni, and other preparations of tin, have likewise been used in the cure of epilepsy; but their effects seem doubtful.

The oxyd of zinc has been much extolled for its virtues in this disease. The dose is from one grain‡ to three, four, or five. It will always be the best way to begin with a single grain, repeated three or four times a day, and so to increase the dose gradually according to the effect it produces on the stomach.

The sulphate of zinc is another metallic tonic much recommended in this disease. We may give half a grain of it thrice a day, and increase the dose gradually.

* 6. R Ferri Ammoniat. gr. x.—xv.

Extract. Gentian. gr. x.

Syrup. q. s. M.

ft. Bolus, ter in die sumendus.

Vel,

7. R Tinct. Ferri Ammoniat. ℥ xv. bis
terve die in aquæ frigid. cyatho.

† 8. R Cupri Ammoniat. gr. j.—iv.

Confect. Aurant. gr. x. M.

ft. Bolus, bis in die adhibendus.

Vel,

9. R Cupri Sulphat. gr. iij.

Extract. Cinchonæ, gr. xij.

Opil, gr. ij.

Syrup. q. s. Misceantur bene in massam et in pilulas vj. divid. quarum capiat æger unam vel duas ter in die.

‡ 10. R Zinc. Oxydi, gr. xij.

Pulv. Cinnam. Comp. gr. xv.

— Cinchonæ, ʒj.

M. et in chartul. xij. divide, quarum unam dos. sumat ter in die.

Vel,

11. R Zinc. Oxydi, gr. xxiv.

Extract. Gentian. ʒss.

Syrup. q. s. M.

ft. Massa in pilulas xij. dividenda, quarum j. sumat mane et vespere cum Decocti Cinchonæ, ʒiss.

* 6. Take Ammoniated Iron, ten to fifteen grains.

Extract of Gentian, ten grains.

Syrup, a sufficiency to form a bolus, which may be taken thrice a day.

Or,

7. Take Ammoniated Tincture of Iron, twenty-two drops twice or thrice a day in a glass of water.

† 8. Take Ammoniated Copper, one grain, gradually increasing it to four grains.

Confection of Orange Peel, ten grains.

Make them into a bolus, to be taken twice a day.

Or,

9. Take Sulphate of Copper, three grains.

Extract of Bark, twelve grains.

Opium, two grains.

Syrup, a sufficiency. Divide the mass into six pills, of which one or two may be taken thrice a day.

‡ 10. Take Oxyd of Zinc, twelve grains.

Compound Powder of Cinnamon, fifteen grains.

Powder of Peruvian Bark, one drachm.

Mix them, and divide the Powder into twelve papers, of which take one dose three times a day.

Or,

11. Take Oxyd of Zinc, twenty-four grains.

Extract of Gentian, half a drachm.

Syrup, a sufficiency to form the mass, which divide into twelve pills, whereof two may be taken morning and evening, with one ounce and a half of a Decoction of Peruvian Bark.

Arsenic has likewise been employed in the cure of epilepsy with some success. It will be best administered in the form of solution, as recommended under the head of Intermittent Fever.

Some instances of the cure of epilepsy having occurred from an accidental use of mercury, this also has been proposed as a remedy.

The nitrate of silver* has been found to be a valuable medicine in the cure of epilepsy, even where the disease has been of many years' standing, and had resisted the powers of other medicines. Two cases of this nature are recorded in the Medical and Physical Journal†. It will be best to begin with a quarter of a grain thrice a day, which dose will be sufficient for an adult at first, but it may afterwards be gradually increased to one grain, or one grain and a half, and be taken in the form of a pill.

A singular occurrence attendant on a long course of this medicine is, that the skin of the patient has been known to contract a blue colour over the whole of the body‡ without there being the least disease of the heart, and where neither the circulation nor respiration were in the least affected. As the blood in these patients is always of the natural hue, it cannot be doubted, I think, with others, that the blue colour must be looked for in the reticula Malpighiana, in which it is produced by the nitrate of silver.

Certain stimulants, such as the tinctura cantharadis and oleum terebinthinæ, have lately been employed with considerable benefit in epilepsy. They produce irritation in certain other organs and parts of the body, particularly the urinary apparatus and alimentary canal, and it is during the continuance of this irritation, or determination to a distant part, that the brain obtains an immunity from the disease.

The oleum terebinthinæ, as just observed, has certainly been used in some cases of epilepsy with success||, as well as in a few other spasmodic diseases: the dose should be considerable to produce any effect, viz. one ounce for a delicate female, an ounce and a half for a robust female or small man, and about two ounces for a robust man. The best vehicle for it appears to be milk or gruel. The most proper time for administering it will be early in the morning, on an empty stomach.

It must be obvious, however, that this remedy can only be employed efficaciously in cases depending upon a cause unconnected

† See vol. i. p. 184, and vol. ii. p. 70.

‡ See Medico-Chirurgical Transactions, vol. vii. part i. p. 279.

|| See Edinburgh Medical and Surgical Journal, No. 35.

* 12. R Argent. Nitratis, gr. iij.
Solve terendo in Aquæ Distillatæ,
℥ aliquot, et adde.
Micæ Panis, q. s.
ft. Massa in pilulas viginti distribuenda.
Unam vel duas sumat bis terve in die.

* 12. Take Nitrate of Silver, three grains.
Dissolve it in a few drops of
Distilled Water, then add
Crumb of Bread, a sufficiency
to form a mass, which is to be made into
twenty pills. The dose may be from one
to two twice or thrice a day.

with diseased organization, and which is producing too great an excitement in the nervous system. In cases connected with diseased organization of the brain, the administration of turpentine would in all probability only aggravate the malady by exciting activity in the vessels of the morbid organ, which it should be the endeavour of the physician rather to arrest and tranquillize.

In some of the worst cases of epilepsy, in which the fits were long and violent, as well as frequent throughout the course of the day, and where the disease had been of some standing, electricity has been found to render them weaker, and to reduce their number very materially in a short space of time. When other means fail to procure the desired effect, we ought therefore to have recourse to this remedy, or galvanism.

The diet in epilepsy should consist of such things as are light, nutritive, and easy of digestion, taking care to avoid whatever is apt to prove flatulent. During the intervals the patient is to keep himself as cheerful and tranquil as possible, carefully guarding against all violent passions or other emotions; and he should take care never to put himself in a hazardous situation, lest a fit should happen to attack him at that period.

When it is present, due care must be taken to prevent him from bruising himself in his struggles; and especially that he does not get his tongue between his teeth. Rubbing the nose, temples, and pit of the stomach with æther, may possibly help to abbreviate the fit by its action on the olfactory organ.

A smaller degree of epilepsy is where the sensibility and irritability remain, but there are spasmodic contractions of the muscles; hence we see many persons affected with twitchings of the face. There are also certain spasmodic pains that come on by paroxysms, which seem likewise of the epileptic kind.

When any of these arise as sympathetic affections, they are only to be cured by removing the primary disorder upon which they depend; but where they take place independent of any other disease, they are to be treated in the manner just recommended to be pursued in the cure of epilepsy.

CATALEPSIS, OR CATALEPSY.

CATALEPSY is that state of the muscular system in which the patients, without fever, lose voluntary motion, and commonly the functions of the five senses, but preserve the mobility of the muscles, and keep the exact position wherein they are attacked, or arbitrarily placed by other persons.

The causes of catalepsy seldom appear to be local, but mostly general. There have been examples where plethora has produced this singular disorder, and where it has been removed by a spontaneous hæmorrhage. Suppressed catamenia, worms, and painful emotions of the mind, as terror, grief, disappointment, profound

meditation, anger, &c., have all occasioned attacks of catalepsy. Women are more frequently attacked by it than men. It sometimes changes into epilepsy, apoplexy, or melancholia, and has been known occasionally to terminate fatally in a few days.

We should, in treating the disease judiciously, endeavour to find out the occasional cause, and adapt our remedies accordingly. If supposed to proceed from plethora, we should unload the vessels by cupping at the back of the neck, cathartics, blisters, a seton, or an issue. When arising from causes of a debilitating nature, tonics joined with antispasmodics will be proper.

During the paroxysms, stimulating cataplasms may be applied to the palms of the hands and soles of the feet. Internally we may administer musk joined with volatiles*, &c.

CHOREA SANCTI VITI, OR DANCE OF ST. VITUS.

THIS disease is marked by convulsive actions, most generally confined to one side; and affecting principally the arm and leg. When any motion is attempted to be made, various fibres of other muscles act which ought not, and thus a contrary effect is produced from what the patient intended. It is chiefly incident to young persons of both sexes, but particularly those of a weak constitution, or whose health and vigour have been impaired by confinement, or by the use of scanty and improper nourishment; and makes its attacks between the age of ten and fifteen, occurring but seldom after that of puberty.

By some physicians it has been considered rather as a paralytic affection than as a convulsive disorder, and has been thought to arise from a relaxation of the muscles, which being unable to perform their functions in moving the limbs, shake them irregularly by jerks.

Chorea Sancti Viti is occasioned by various irritations, as teething, worms, acrid matter in the bowels, offensive smells, poisons, &c. It arises likewise in consequence of violent affections of the mind, as horror, fright, and anger. Occasionally it depends upon an excessive impulse of blood in the brain, and in such cases it is greatly aggravated by whatever increases the action of the heart, and of course relieved by means that lessen this. In many cases it is produced by general weakness and irritability of the nervous system, and in a few it takes place from sympathy at seeing the disease in others, or by imitating them; hence it not unfrequently

* 1. R Mistur. Moschi, ℥ij.
Aq. Pulegii, ℥ij.
Spirit. Ammon. Fœtid. ℥ij.

Tinct. Valerian. ℥ss. M.

ft. Mistura, cujus sumat cochl. ij. secundis
vel tertiis horis.

* 1. Take Musk Mixture, three ounces.
Pennyroyal Water, two ounces.
Fetid Spirit of Ammonia, two
drachms.
Tincture of Valerian, half an
ounce.
Mix them, and let two table-spoonsful be
taken every two or three hours.

spreads in public seminaries, particularly among girls, if its progress is not checked by separation.

The fits are sometimes preceded by a coldness of the feet and limbs, or a kind of tingling sensation that ascends like cold air up the spine; and there is a flatulent pain in the left hypochondrium, with obstinate costiveness. At other times the accession begins with yawning, stretching, anxiety about the heart, palpitations, nausea, difficulty of swallowing, noise in the ears, giddiness, and pains in the head and teeth, and then come on the convulsive motions.

These discover themselves at first by a kind of lameness or instability of one of the legs, which the person draws after him in an odd and ridiculous manner, as if it was paralytic; nor can he hold the arm of the same side still for a moment; for if he lays it on his breast, or any other part of his body, it is forced quickly from thence by an involuntary convulsive motion. If he is desirous of drinking, he uses many singular gesticulations before he can carry the cup to his head, and it is forced in various directions, till at length he gets it to his mouth, when he pours the liquor down his throat with great haste, as if he meant to afford amusement to the by-standers. Sometimes various attempts at running and leaping take place, and at others the head and trunk of the body are affected with convulsive motions. The eye loses its lustre and intelligence, and the countenance is pale and expressive of vacancy; deglutition is occasionally performed with difficulty, and articulation is often impeded, and sometimes completely suspended. In the advanced periods of the disease, flaccidity and wasting of the muscular flesh take place, the consequence of constant irritation, of abated appetite, and impaired digestion.

In many instances the mind is afflicted with some degree of fatuity, and often shews the same causeless emotions, such as weeping and laughing, which occur in hysteria.

When the disease arises in children, it usually ceases again before the age of puberty, and in adults is often carried off by a change from the former mode of life. Unless it passes into some other disease, such as epilepsy, or its attacks are very violent, it is rarely attended with danger.

Where chorea arises in those of a weak irritable habit, and is wholly unconnected with any species of irritation, either of teething, worms, or acrid matter in the first passages, we should not employ evacuants, but have recourse to strengthening remedies, with the view of increasing the tone of the muscular system.

Cinchona bark in large doses, with the assistance of cold bathing, has often effected a cure; but the metallic tonics which have been advised under the head of Epilepsy, will be more likely to prove efficacious than those of the vegetable class. We have just grounds for believing that the liquor arsenicalis is a valuable and powerful medicine in the treatment of chorea, particularly if

conjoined with a few drops of *tinctura opii*; and indeed several cases of this disease, which were cured by this medicine, are recorded in vol. x. part i. of the *Medico-Chirurgical Transactions of London*: a few have also occurred in my own practice. To tonics we may join antispasmodics, such as opium, musk, and camphor, as prescribed under the same head. *Hyoscyamus* and *belladonna* are medicines sometimes employed in chorea with success, when all others have proved ineffectual, particularly the latter. When given to children, we may begin with about a grain daily, in divided doses, and gradually increase the quantity to one grain and a half.

During a use of these medicines, if costiveness prevails, it should be removed by some gentle laxative.

Should the disease resist these means, it probably may be carried off by strong electrical shocks directed through the whole body. Terror suddenly excited has been known to effect a cure.

The application of a perpetual blister to the *os sacrum* has, in addition to electricity, occasionally been found a valuable remedy. Dry cupping has in some instances been thought to have proved useful. In some cases of chorea, where from the frequency of the paroxysms a morbid condition of the brain has arisen, the insertion of a seton in the neck, and this kept open for a considerable time, has been attended with a happy effect.

Chorea has pretty generally been considered by systematic writers as a disease of debility, and this opinion has been almost universally adopted by practical physicians, inducing them to employ tonics, stimulants, and antispasmodics for its cure; but in many cases this has proved very difficult; and when not removed by the change which the system undergoes at the age of puberty, the disease has continued to harass the wretched sufferer ever afterwards. This fact being well established, we should undoubtedly regard the symptoms of chorea as sometimes depending on local irritation and not on debility; and in such cases they are to be obviated by removing the causes of irritation, by scarifying the gums, by expelling worms, or by a use of brisk purgatives. From some cases reported in the first number of the *Edinburgh Medical and Surgical Journal*, and which were received into the Royal Infirmary of that city, it appears that very complete cures were effected by the frequent exhibition of drastic purges, consisting of mercury and jalap. Irritation in the first passages no doubt had occasioned the chorea in these instances.

A modern writer tells us*, that having met with many cases of chorea which he treated in the usual way, but without success, he was induced to desert the practice, and to consider the disease in a different light from that in which it had been commonly viewed. He conceived that the debility and spasmodic motions hitherto so much considered, might not be the leading symptoms of the dis-

* See *Observations on the Utility of Purgative Medicines*, by Dr. Hamilton.

ease, but might depend upon previous and increasing derangement of health, as indicated by irregular appetite and constipation of the bowels. Under this impression he resolved to alter the mode of treating the disease, and began trying the effects of purgative medicines given regularly in moderate doses.

The success of the new practice established, he mentions, the justness of his opinion, and encouraged him to persevere with steadiness and activity. To procure a discharge of the indurated and fetid fæces, he found it necessary to employ active and strong purgatives in the confirmed stage of the disease, given in successive doses, in such a manner that the latter doses might support the effect of the former; but in the first stage of chorea, while the intestines yet retain their sensibility, and before the accumulation of fæces is great, gentle purgatives, repeated as the occasion may require, he experienced readily to effect a cure, or rather prevent the full formation of the disease. He mentions, that an occasional stimulus from purgatives will be requisite to support their due action and to restore their healthy tone, even after a regular appetite for food, a more intelligent eye and lightened countenance, cheerfulness, increasing aptitude for firmer motions, the restoration of articulation, and the power of deglutition, and a renovation of flesh and strength succeed each other.

The oleum terebinthinae in considerable doses has been administered with decided advantage in some cases of chorea; and probably this may be owing to its acting as a powerful cathartic. —See Tænia.

That a disordered state of the bowels is the only source of irritation capable of exciting chorea, cannot, I think, be admitted, although it may be allowed a frequent one. Other sources of irritation in any organ of the system may be equally capable of exciting these convulsive motions. In the treatment of the disease, our object should therefore be to ascertain what is the cause of the present disturbance, and to prescribe accordingly.

Some people, particularly women in a state of pregnancy, are very subject to spasmodic contractions of the joints, coming on periodically, and attended with very violent pain: for the removal of these, anodyne frictions appear to be the best remedy.

RISUS SARDONICUS, OR SARDONIC LAUGH.

IN this disease there prevails a fit of laughing, arising from no evident cause, which continues often in a violent degree for three or four nights, so as to prevent the patient from sleeping. By its duration in this way, great debility is produced; and frequency of the pulse and other febrile symptoms arise. It then either proves fatal by its violence, or goes off spontaneously.

Antispasmodics, such as musk, castor, assafœtida, camphor, and æther, have usually been employed to remove the disease, but

without effect; so that we are unacquainted with any remedy that will prove effectual; and the spontaneous cessation of the fit is more to be trusted to than any aid from medicine. Large doses of opium might probably afford some relief.

TETANUS, or CRAMP.

TETANUS is an involuntary and almost constant contraction of all or several of the muscles, while the senses remain perfect and entire. It may be considered as of two kinds, viz. symptomatic, the consequence of wounds; and idiopathic, occasioned by exposure to cold. In Europe the traumatic species is almost the only form in which tetanus occurs, whereas between the tropics the idiopathic tetanus is by no means unfrequent.

By practical writers, tetanic complaints have been distinguished into opisthotonos, emprosthotonos, and trismus, in allusion to the situation of the parts affected; but they are all evidently only different degrees of one and the same disease.

These affections arise more frequently in warm climates than in cold ones. They attack persons of both sexes, of all ages, temperaments, and complexions, but the male sex more frequently than the female, and those of a robust and vigorous constitution oftener than those of a weak habit. An idea is entertained by many, that negroes are more predisposed to attacks of tetanus than white people: they certainly are more frequently afflicted with it; but this circumstance does not arise from any constitutional predisposition, but from their being more exposed to punctures, and wounds in the feet, by nails, splinters of wood, pieces of broken glass, &c., from going usually barefooted.

Tetanic affections are occasioned either by exposures to cold when under profuse perspiration, sleeping in the open air on damp ground, or by the presence of irritating substances in the stomach and bowels, such as worms; or by some irritation of the nerves, in consequence of local injury by puncture, incision, or laceration. Lacerated wounds of tendinous parts prove in warm climates a never-failing source of these complaints. In cold climates, as well as in warm ones, the locked-jaw, or trismus, frequently arises in consequence of various surgical operations, particularly the amputation of a limb, or of gun-shot wounds. Some cases have been recorded where trismus was supposed to be owing to affections of the mind.

When the disease has arisen in consequence of a puncture, wound, or any other external injury, the symptoms shew themselves generally about the eighth day; but when it proceeds from an exposure to cold, they generally make their appearance much sooner.

In some instances tetanus comes on suddenly, and with great violence; but it more usually makes its attack in a gradual man-



ner; in which case a slight stiffness is at first perceived in the back part of the neck, which after a short time becomes considerably increased, and at length renders the motion of the head both difficult and painful.

With the rigidity of the head there is likewise an uneasy sensation at the root of the tongue, together with some difficulty of swallowing; and great tightness is perceived about the chest, with a pain at the extremity of the sternum shooting into the back. A stiffness also takes place in the jaws, which soon increases to such a height that the teeth become so closely set together as not to admit of the smallest opening. When the tetanic affection is confined to the jaws, the disease is called trismus.

In some cases the spasmodic affection extends no further; in others, the spasms at this stage of the disease, returning with great frequency, become likewise more general, and now affect not only the muscles of the neck and jaws, but likewise those of the whole of the spine, so as to bend the trunk of the body very forcibly backwards, and this is what is named opisthotonos. Where the body is bent forwards, the disease is called emprosthotonos.

During the whole course of the disorder the abdominal muscles are violently affected with spasm, so that the belly is strongly retracted, and feels very hard, most obstinate costiveness prevails, and both the flexor and extensor muscles of the lower extremities are commonly affected at the same time, so as to keep the limbs rigidly extended.

The flexors of the head and trunk become at length so strongly affected as to balance the action of the extensors, and to keep the head and trunk so rigidly extended and straight as to render it incapable of being moved in any direction. The arms, which were little affected before, are now likewise rigidly extended; the tongue also becomes affected with spasm, and being convulsively darted out, is often much injured by the teeth, the jaws at that moment snapping together. It is to this state of the disease that the term of tetanus has been strictly applied.

The spasms which recur at first every ten or fifteen minutes, besides being brought on by slight movements of the body and pressure on the abdomen, are, in the advanced stages, excited by the presentation of any substance, solid or fluid, to the lips, so as at first view nearly to resemble those in a person affected with rabies. Tetanus is seldom attended with either nausea or vomiting, or with any fever, but always with most violent pain.

The disorder continuing to advance, every organ of voluntary motion becomes affected, the eyes are rigid and immoveable in their sockets, the countenance is hideously distorted, and expresses great distress, the strength is exhausted, the pulse becomes irregular, and one universal spasm puts a period to a most miserable state of existence.

With regard to the duration of tetanus, when it proves fatal it

generally carries off the patient before the tenth day, but sometimes before the fifth; and the younger the subject, the more rapid the disease.

When tetanic affections arise in consequence of a wound, puncture, or laceration, they are almost sure to prove fatal, as I never but once met with a recovery under such circumstances, during a very extensive practice and long residence in the West Indies. The lock-jaw arising in consequence of an amputation, or gunshot wounds, likewise proves usually fatal. When these affections are produced by an exposure to cold, they may in most cases be removed by a timely use of proper remedies, notwithstanding a considerable space will probably elapse before the patient will be able to regain his former strength. Although there is sometimes a great abatement of the spasms in tetanus, still they are apt to return with renovated force.

Dr. Parry* has remarked, that if, in an adult, the pulse by the fourth or fifth day does not reach 100 or 110 beats in a minute, he believes the patient almost always recovers: if, on the other hand, the pulse on the first day is 120 or more in a minute, few instances, he apprehends, will be found in which he will not die. This observation respecting the acceleration of the pulse, has not, however, been confirmed by other practitioners.

On dissections of this disease, slight effusions within the cranium have been observed in a few instances; but in by far the greater number nothing particular has been discovered, either in the brain or any other organ. In some instances, however, the blood is not found in coagula, but fluid like molasses, as in animals killed by lightning, appearing to indicate that the whole muscular fibres of the arterial system had partaken of the general spasmodic action.

The bodies of tetanic patients run rapidly into putrefaction after death.

It is stated by Baron Larrey, that in his examination of bodies of persons who have died of tetanus, he found the pharynx and œsophagus much contracted, and their internal membranes red, inflamed, and covered with a viscid reddish mucus. Others have discovered the intestines much inflamed, and in a few instances a yellow waxy fluid of a peculiar offensive smell covering their internal surface†; but whether the inflammation was primary, or only a consequence of the pressure of the abdominal muscles, which contract so violently in this disease, has not been decided. The inflammation in tetanus is however different from that observed in enteritis: in the latter, the intestines often adhere to one another by layers of coagulable lymph, recently thrown out; flakes of a curdled matter are frequently found, and pus is sometimes formed. In the inflammation attending tetanus, there are no adhesions; nor is there any formation of pus.

* See his Cases of Tetanus and Rabies Contagiosa, p. 18.

† See Medico-Chirurgical Transactions, vol. vii. part ii. p. 459.

The nerves of tetanic patients have been examined after death, from the place of injury to their central termination, but no inflammation has been observable in any part of their course: the supposition, therefore, of an inflamed nerve being the cause of tetanus, ought to be rejected.

Although our endeavours may not be crowned with success, where tetanus or trismus arises from a lacerated wound, or puncture in some tendinous part, still we should by no means suffer the patient to remain in so miserable a state of existence without making some efforts to afford even a temporary relief or alleviation of his sufferings.

On being applied to for advice, the practitioner should endeavour in the first place to find out the cause which has given rise to the disease. If supposed to proceed from a wound or puncture, he ought carefully to examine the injured part, and to extract, as quickly as possible, any extraneous body that may have lodged therein, taking care at the same time to dilate or freely lay open the wound.

These steps being taken, it may possibly be attended with some advantage to pour a small quantity of a strong solution of opium into the wound, dressing it afterwards with a little lint dipped in the same, and laying a pledget spread with some digestive ointment over the whole. Every time the dressings are renewed, the wound is again to be wetted with the solution.

The partial division of a nerve being sometimes supposed to occasion tetanic affections, the practitioner ought, when this is suspected to be the case, to make a deep incision into the part which has been injured, so as to divide the tendinous and nervous fibres entirely, after which he should adopt the mode of treatment that has just been recommended.

Pencilling the wound freely with lunar caustic, and afterwards covering it with a poultice of bread and milk, with the view to obtain suppuration as soon as possible, is another mode of proceeding which has been pursued in tetanus arising from external injury. Baron Larrey has recommended the application of a hot iron in these cases, promoting suppuration afterwards as speedily as possible by stimulant dressings*.

Dr. Darwin recommends† the wound to be dilated, and then to fill it with lint moistened with spirits of turpentine, which brings on an inflammation in it, and thereby cures or prevents the convulsions.

A case of trismus, which was successfully treated by Dr. Stevenson, of Baltimore, America, in this manner, is recorded in the 3d No. of the New Medical and Physical Journal, p. 220.—S. P. a stout plethoric black woman, aged about thirty-five years, in walking barefoot, chanced to tread upon a piece of glass, which wounded her foot near the first joint of the little toe. It bled

* See his Military Surgery.

† See Zoonomia, vol. iv. page 47.

copiously, and no attention was paid to it. It healed, as usual, in a few days after the accident. At the expiration of three weeks she was suddenly seized with a spasm in the muscles of the lower jaw, accompanied with intolerable pain, particularly near the coronoid and condyloid processes. This, in spite of large quantities of opium, increased, and a rigidity of the jaw superseded to such an extent, that she could not masticate her food. Two grains of opium were given every two hours without any alleviation of the symptoms. In this dreadful state the Doctor made an incision about half an inch deep, and an inch and a half in length, immediately above the cicatrix, in a transverse direction, and then poured strong spirits of turpentine into the wound. In a few minutes violent pain was created in the part; in half an hour the spasms left the jaw; and in a few hours more the rigidity entirely vanished. The pain in the wound became excessive, and continued so for four or five hours; but the trismus was completely removed; nor did it ever recur. Little or no suppuration ensued, the wound healing by the first intention or adhesive inflammation.

Opium is the medicine which has been employed with the best effect in cases of tetanus; but it should always be given in moderate doses at first, and so be increased gradually. In administering opium in this disease, the attention must, however, be directed to the effect that it produces on the patient, and not to the quantity which is taken, as many cases are on record, where an ounce of it in substance has been given in the course of twenty-four hours, the spasms having been very frequent and violent.

By many it has been supposed that joining it with musk, camphor, and æther, has greatly added to its effect. A combination of these medicines (as in the formulæ below *) had therefore best be used, taking care to increase the quantity of opium in each succeeding dose. The good effects of opium combined with James's powder, as also with ipecacuanha in some cases of tetanus arising from wounds, are attested by Dr. Latham, in the 4th volume of the Medical Transactions of the London College of Physicians.

Giving the mild alkali internally, and administering opium at the same time in alternate doses, together with the use of a hot bath impregnated with potass and a few ounces of quick-lime, is a mode

* 1. R Moschi, gr. x.
Spirit. Cinnam. f. ʒij.
Mistur. Camphoræ, f. ʒj.
Tinct. Opii, m̄ xxvj. M.
ft. Haustus, 3tia vel 4ta hora sumendus.

Vel,
2. R Misturæ Camphoræ, f. ʒvjss.

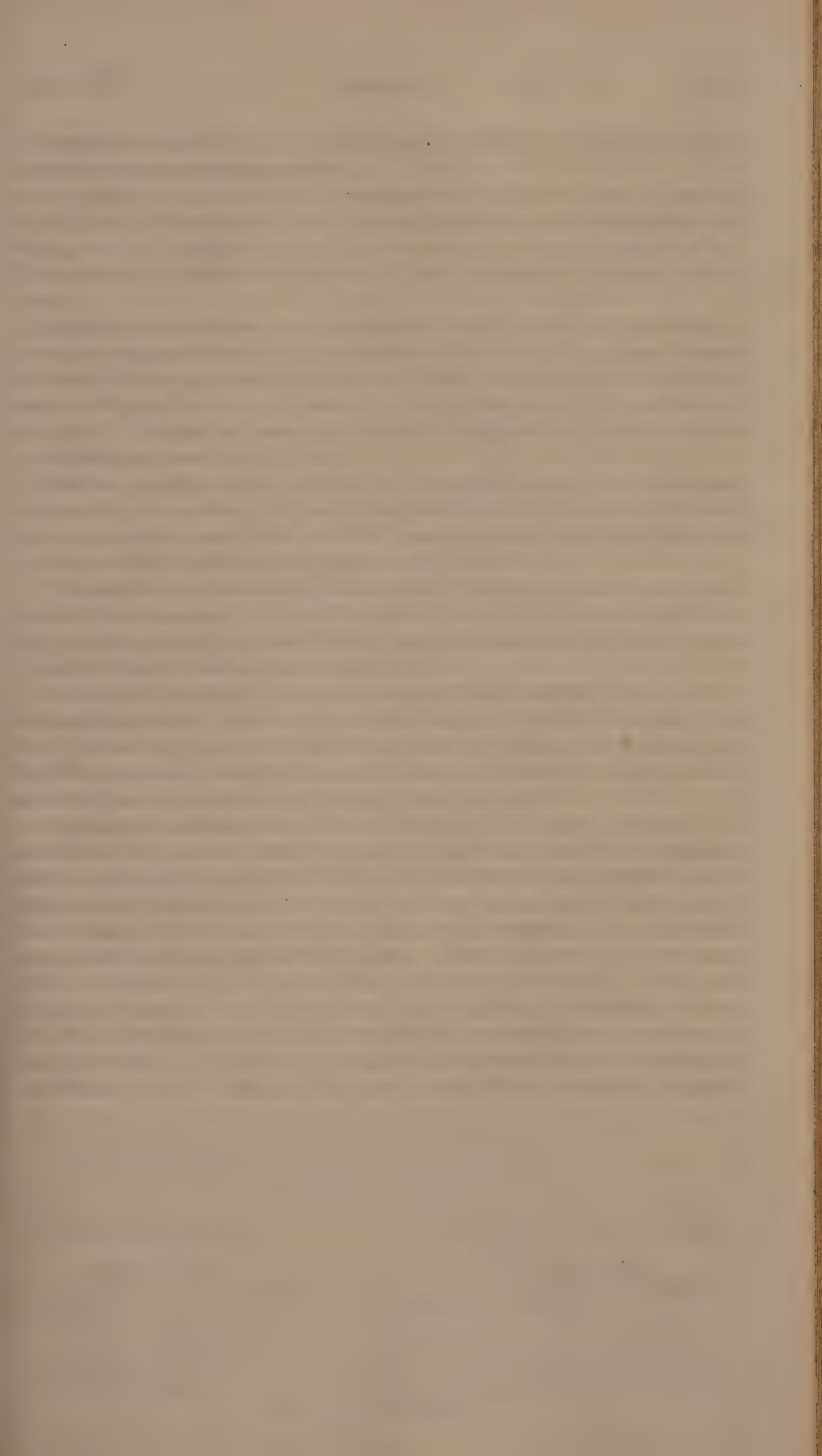
Spirit. Æther. C. f. ʒss.

Tinct. Opii, f. ʒij. M.
ft. Mistura, cujus sit dosis cochlearia duo
magna tertiis horis.

* 1. Take Musk, ten grains.
Spirit of Cinnamon, two drachms.
Camphor Mixture, one ounce.
Tincture of Opium, forty drops.
Mix them for a draught, to be taken every
third or fourth hour.

Or,

2. Take Camphor Mixture, six ounces and
a half.
Compound Spirit of Æther, half
an ounce.
Tincture of Opium, two drachms.
Of this mixture, the dose may be two table-
spoonsful every three hours.



of treatment much recommended by Dr. Stutz, of Suabia, in tetanus and trismus traumaticus*.

An alternate internal use of opium and subcarbonate of potass is said to have been employed in the hospitals of Germany among the wounded soldiers in the late war with a most happy effect. The remedy is, therefore, worthy of our attention in tetanic affections.

In those cases where the jaws are so firmly locked together as to prevent a spoon from being introduced between them, and where the teeth are quite perfect in front, it will be necessary to extract some of them, for the purpose of giving the patient his medicines and food. When he loses the power of deglutition, opium is then to be administered in clysters.

Besides giving opium internally, it may likewise be employed externally, by rubbing the parts frequently which are most affected by spasm with equal parts of the linimentum saponis and tinctura opii, or with the ointments prescribed below †.

This mode of introducing opium into the system will more particularly be necessary where the patient loses the power of swallowing; and by being applied to the parts immediately affected, promises fair for affording essential relief.

Dr. Mosely asserts‡, that opiates applied externally are not of the smallest utility either in the prevention or cure of tetanus. In this I must beg leave to differ from him, as, during my practice in the West Indies, I met with many instances where the most evident advantages were derived by using it in this way.

To procure a relaxation of the spasms, it has been customary to make use of a warm bath in conjunction with anodyne frictions, and occasionally a clyster of tobacco|| has been administered about twice a day with success; but in all the instances of a recovery from tetanus which have taken place under my care, the cold bath was substituted instead of the warm. These, however, were cases (one excepted) which arose from exposures to cold. The plan generally pursued was, to throw a large pailful of cold water every two hours on the patient, after which he was wiped dry, and again put into bed; an opiate draught, similar to what has been advised, was then given to him, and the parts most affected were well rubbed

* See Medical and Physical Journal, vol. iii. p. 572, and vol. v. p. 472.

† See his Treatise on Tropical Diseases, p. 494.

|| See the Edinburgh Med. and Surgical Journal, No. 42, p. 198.

† 3. R Opii Pulv. Subtilis, ʒj.

Camphoræ, gr. xv.

Adipis Præparat. ʒss. M.

ft. Unguentum.

Vel,

4. R Adipis Præparat. ʒj.

Olei Succin. f. ʒss.

Opii Pulverisat. ʒij. M.

† 3. Take Opium, reduced to a powder, one drachm.

Camphor, fifteen grains.

Prepared Lard, half an ounce.

Mix them as an ointment.

Or,

4. Take Prepared Lard, one ounce.

Oil of Amber, half an ounce.

Opium, pulverized, two drachms.

Mix them.

with a strong anodyne liniment. When he was so far recovered as to be able to swallow with facility, the cinchona bark was also given to him with a very free allowance of wine; which course was pursued for a considerable time after the spasmodic affection had ceased.

In traumatic tetanus, a warm bath seems entitled to a decided preference over a cold one. Bathing in water heated to a temperature of from 87 to 97 degrees, Dr. Currie says, allays the violent action of the heart and arteries, and soothes the system of sensation: it reduces the pulse in frequency, moderates and equalizes vascular action, relaxes the muscular fibres, removes rigidity, and disembarrasses the organs of respiration. Recognizing such virtues in water raised to the warm temperature, we may estimate its application in the form of a bath, as at least a soothing remedy for the sufferings which a genuine paroxysm of tetanus never fails to inflict.

It has been recommended by some physicians to endeavour to excite a salivation by using mercury both internally and externally; but, I must say, I never found it answer. My trials of it were, however, few; for having experienced the method which I have recommended to be so very successful, in almost every instance where the disease arose from an exposure to cold, I should not have thought myself justified in losing time by using any remedy which was attended with uncertainty.

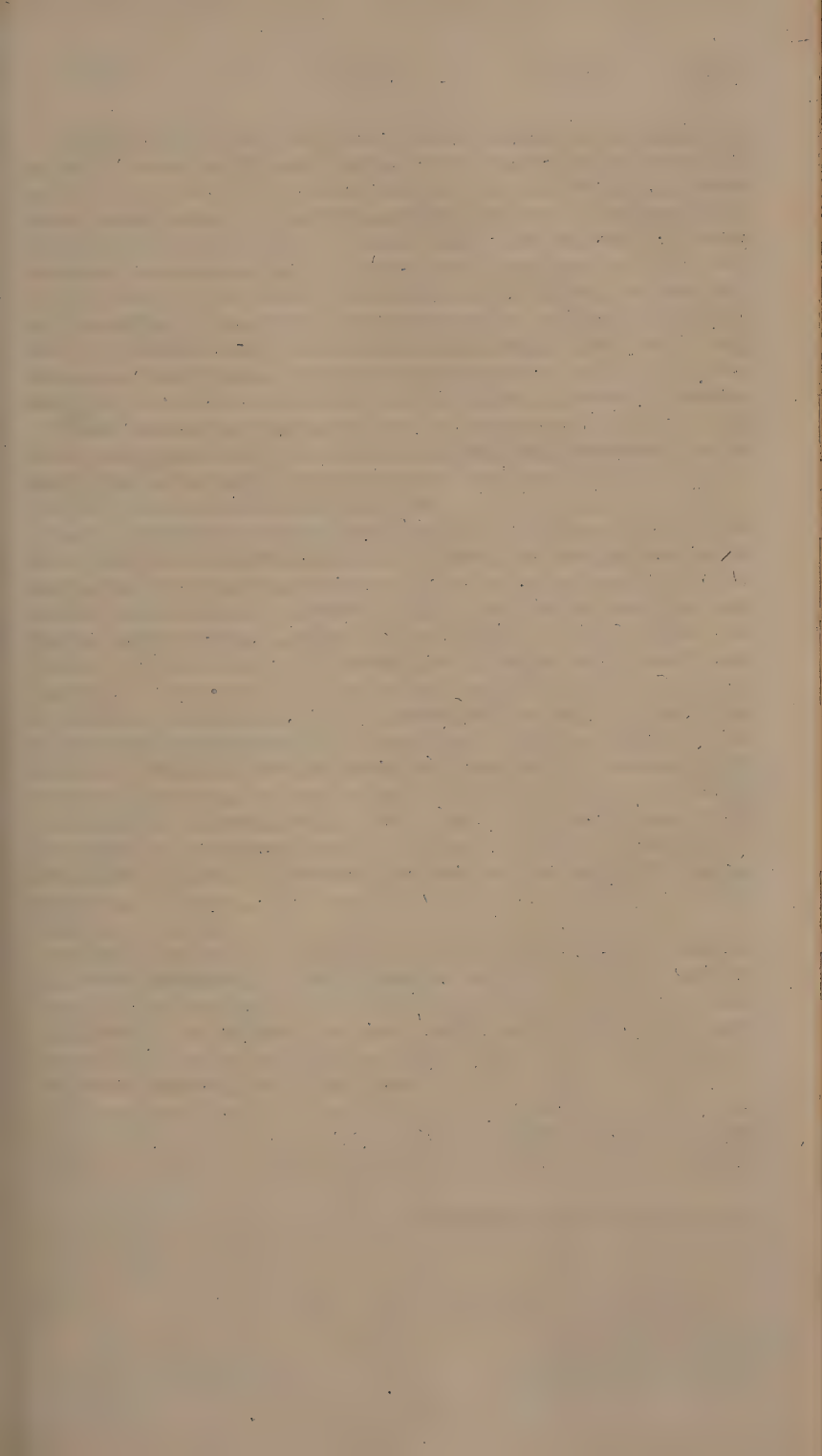
Where mercury is employed in the cure of tetanus with the view of exciting a salivation, the patient should be put now and then into a warm bath; and that he may have every chance of recovering, I would recommend a joint use of opium at the same time.

In the Transactions of the College of Physicians of Philadelphia, vol. i. part i., is inserted a case of tetanus, from the extraction of two teeth, which was successfully treated by Dr. Rush, by a use of mercury and wine; and others are elsewhere recorded on indisputable authorities.

In the New York Medical Repository for 1779, is mentioned another case of tetanus arising from the puncture of a pin in the wrist, which was successfully treated by Dr. Hosack with wine (Madeira) *alone*; the woman having taken three gallons in a few days, in doses of a wine-glassful (containing about two ounces) every hour. It seems necessary to observe, however, that in this case the wound was freely pencilled with lunar caustic, after which it was covered with an emollient poultice.

In those affections where inflammation of the system might be of service, Dr. Darwin thinks wine might be preferable to opium. He mentions, that he has observed a mixture of rectified spirit and warm water, given alternately with the doses of opium, has soonest and most certainly produced that degree of intoxication which was necessary to relieve the patient in the epilepsia dolorifica*.

* See Zoonomia, vol. ii. p. 431.



In some cases of tetanus arising from wounds in the limbs, it probably would be the best practice to amputate as soon as the symptoms appear. This plan is strongly recommended by Baron Larrey, who acted as surgeon-in-chief to the French army in Egypt and Syria*; for he found that it succeeded in some instances when assisted by the warm bath, aperients, venesection, opium, camphor, and other remedies. Even where the case terminated fatally, he found that the operation relieved the symptoms very considerably; but he nevertheless does not justify any surgeon in resorting to amputation as a general means of terminating the distresses which tetanic patients are doomed to endure.

When tetanus has proceeded from an exposure to cold, it is apt to be attended with some slight inflammatory symptoms; to remove which, bleeding is sometimes had recourse to, but it usually proves injurious instead of beneficial.

As costiveness is a constant attendant on tetanus, it should be obviated by the frequent exhibition of some active aperient† while the power of swallowing remains; and after it has ceased, by the regular exhibition of clysters. Oil of turpentine may be employed as an evacuant, either by the mouth, or in the form of a clyster. If in the first way, make trial of half an ounce every two hours in a little gruel, if the patient be able to swallow; but if not, administer one ounce in an enema twice a day, along with the other remedies necessary to be employed. Of the utility of purgatives in cases of tetanus, whether idiopathic or occurring after wounds, there can be no doubt, and their efficacy is strongly enforced by Dr. Hamilton‡. The torpor of the intestines which precedes and accompanies this disease, is highly deserving of attention. In many instances the evacuations have not the appearance of fæces, but are nevertheless of a highly offensive nature.

Among the remedies for tetanus, it may be proper to mention the oleum petrolei, or Barbadoes tar, which, by being taken internally, has been said in some instances to have effected a cure.

Electricity is reported to have lately been employed in some cases of the locked-jaw with a happy effect. The remedy seems therefore deserving of further trials.

Throughout the whole course of all tetanic affections, the patient's strength is to be supported by wine, mixed with such things as he can easily swallow; and where this power ceases, nutritive clysters must be substituted.

* See Relation Historique et Chirurgicale de l'Expédition de l'Armée d'Orient en Egypte et en Syrie, par D. J. Larrey.

† See his Treatise on Purgatives.

† 5. R Infus. Sennæ. Comp. f. ℥jss.

Sodæ Sulph. f. ℥ss.

Tinct. Jalapæ, f. ℥ij.

Syrup. Rhamni, f. ℥j. M.

ft. Haustus.

† 5. Take Compound Infusion of Senna, one ounce and a half.

Sulphate of Soda, half an ounce.

Tincture of Jalap, two drachms.

Syrup of Buckthorn, one drachm.

Mix them for a draught.

The trismus nascentium is a species of tetanus; but this is inserted among the diseases peculiar to infants.

Dr. James Clark, in his Treatise on West-India Diseases, informs us, that, being unable to cure the symptomatic tetanus, he endeavoured to prevent it; and for this purpose, after wounds and punctures, he gave two or three grains of calomel twice a day till a gentle salivation came on, and he pursued the same plan after operations. Out of fifteen patients, after amputation, that were treated in this way, only one died, and he was in so irritable a state before, that bad consequences were dreaded. In those who had been wounded or punctured, the success was greater; two only having been lost out of a great number since this mode of practice was begun.

To prevent tetanic affections from arising after wounds and chirurgical operations, I understand it is almost an universal practice on board of ships of war to mix tincture of opium with the dressings, and that since this practice has been adopted these complaints seldom occur. As a prophylactic, I should be much inclined to adopt this mode of treatment in preference to that proposed by Dr. Clark.

SINGULTUS, OR HICCUP.

Hiccups are a spasmodic affection of the stomach and diaphragm, arising from some peculiar irritation. They are in general symptomatic, but in some instances they appear as a primary disease.

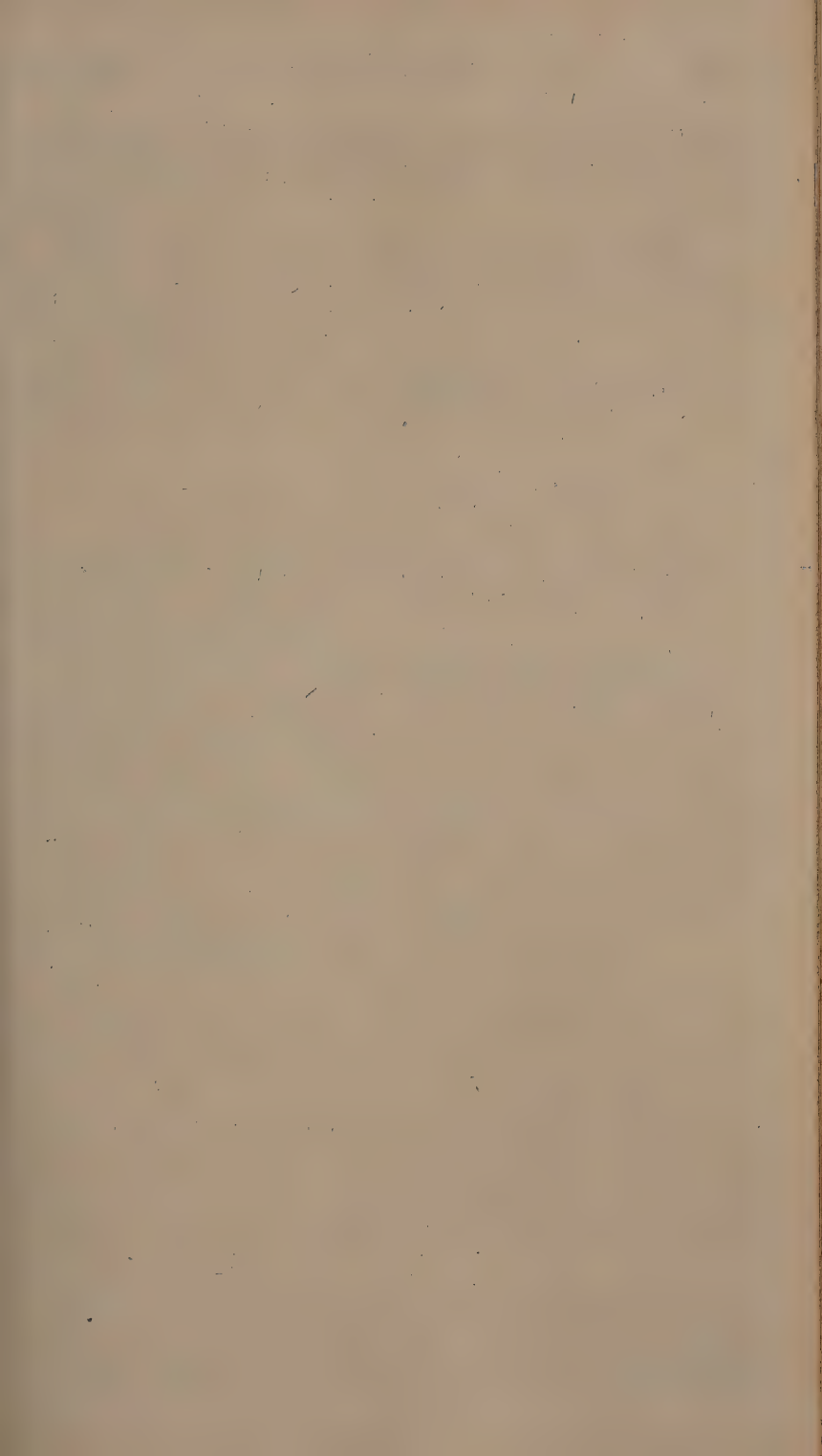
When they are idiopathic, they usually arise from an error in diet or from an acidity in the stomach. When symptomatic, they either come on towards the termination of some acute disease, attend on injuries done to the stomach and other viscera, or prevail as an affection attendant on hysteria.

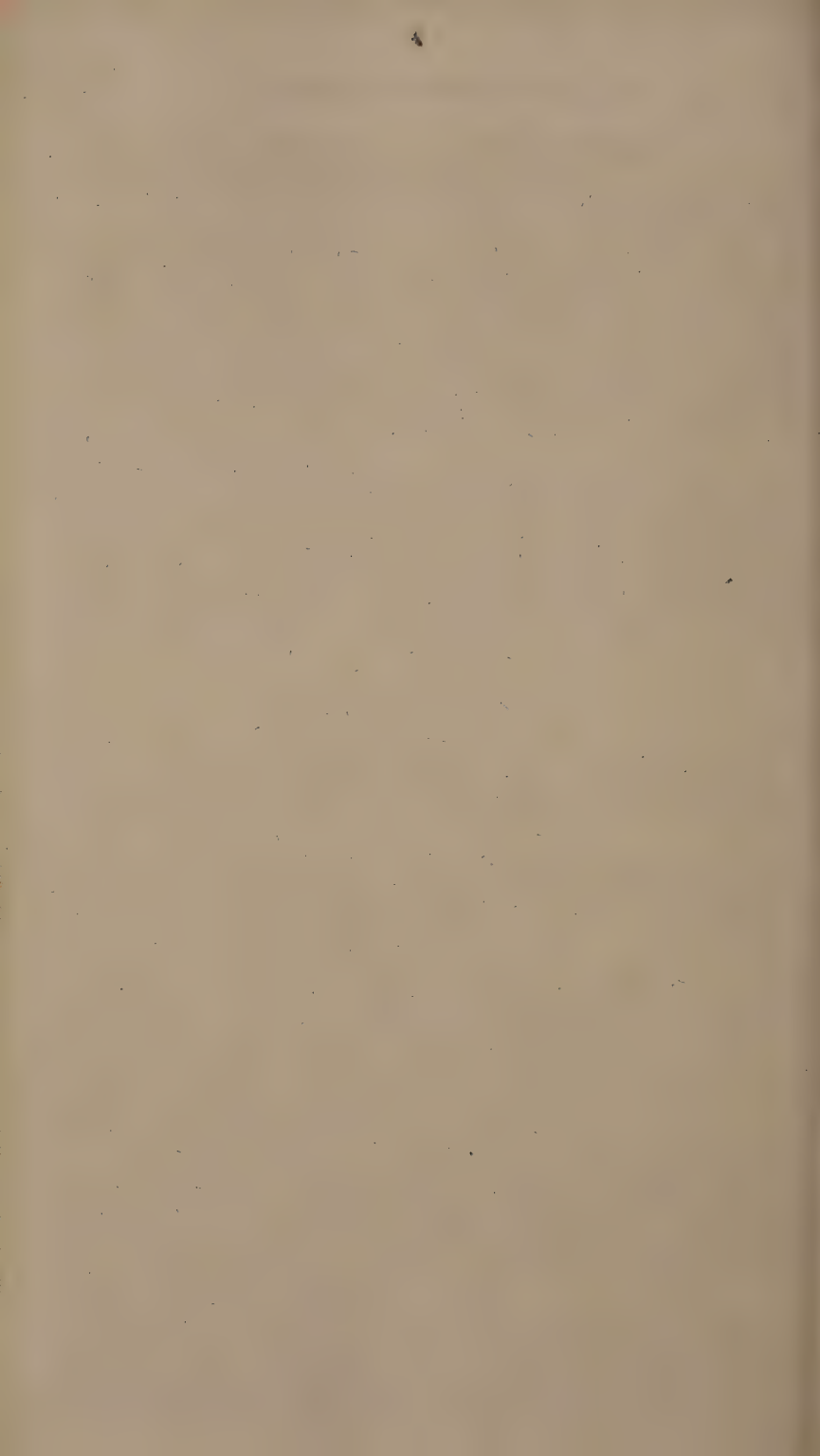
Hiccups prevailing as a primary affection, are never attended with danger, and are in general easily removed; but when they arise in any acute disorder, or after a mortification has taken place, they may always be looked upon as the forerunners of death.

The appearances on dissection will depend entirely on the disease of which they have appeared as a symptom.

A common hiccup is often removed by taking a few small draughts of cold water, in quick succession, or by a sudden excitement of some degree of fear or surprise. When these simple means do not answer, recourse must be had to antispasmodics, the most useful of which for this disease seem to be æther, musk, and opium. These may either be combined together, or be given separately.

In the accidental hiccup of youth or of very old people, a pretty certain remedy is a small quantity of any powerful acid, such as a tea-spoonful of vinegar or lemon-juice, or a little peppermint-water acidulated with a few drops of sulphuric acid.





Where hiccups prove violent as well as obstinate, the application of a large plaster of Venice treacle to the patient's stomach sometimes affords relief; but should it fail, a blister may then be substituted.

Hiccups sometimes proceed from an acidity in the stomach, and hence it is that infants are very apt to be affected with them. When they arise from this cause, a little prepared chalk or magnesia joined with some carminative, such as the *oleum anisi*, will be the most proper medicine.

When hiccups arise at the close of any acute or malignant disease, or in consequence of a mortification, no advantage can be obtained from medicine, or any other means whatever.

PERTUSSIS, OR WHOOPING COUGH.

PERTUSSIS is a convulsive cough, interrupted by a full and sonorous inspiration, and returning in fits that are usually terminated by a vomiting or expectoration. In its first stage, it may be considered as a febrile disease.

Children are most commonly the subjects of pertussis, and it seems to depend on a specific contagion, which affects them in general but once in their life. I have said in general, because instances have occurred where the same person has been attacked with it a second time, although an idea contrary to this is entertained by the generality of practitioners. The disease being produced, the fits of coughing are often repeated without any evident cause; but in many cases the contagion may be considered as only giving the predisposition, and the frequency of the fits may depend upon various exciting causes, such as violent exercise, a full meal, the having taken food of difficult digestion, and irritation of the lungs by dust, smoke, or disagreeable odours. Emotions of the mind may likewise prove an exciting cause.

Pertussis often prevails epidemically, but does not, in this respect, appear to be influenced by any particular season of the year. It has however been observed to be much milder in warm climates than in cold ones; and it would seem, in conformity to this law, that the disease is found to be more severe in this country during autumn and winter, than during spring and summer. It arises generally from contagion, it is true; still it must be allowed that there is a principle independent of contagion capable of producing the complaint, and that this principle undoubtedly exists in the atmosphere, which it pervades to a certain extent; but what it is, and how formed, remains a curious subject for physical research.

The proximate or immediate cause of pertussis seems to be a viscid matter or phlegm lodged upon the bronchiæ, trachea, and fauces, which sticks so close as to be expectorated with the greatest difficulty. Some have supposed it to be a morbid irrita-

bility of the stomach, with increased action of its mucous glands ; but the affection of the stomach which takes place in the disease, is clearly only of a secondary nature, so that this opinion must be erroneous.

The whooping cough usually comes on with an oppression of breathing, some degree of thirst, a quick pulse, and other slight febrile symptoms, which are succeeded by a hoarseness, cough, and difficulty of expectoration. These symptoms continue perhaps for a fortnight or more, at the end of which time the disease puts on its peculiar and characteristic form, and is now evident, as the cough becomes convulsive, and is attended with a peculiar sound, which has been named a whoop.

When the sonorous inspiration has taken place, the coughing is again renewed, and continues in the same manner as before, till either a quantity of mucus is thrown up from the lungs, or the contents of the stomach are evacuated by vomiting. The fit is then terminated, and the patient remains free from any other for some time, and shortly afterwards returns to the amusements he was employed in before the accession of the fit, expresses a desire for food, and when it is given to him, takes it greedily. In those cases, however, where the attack has been severe, he often seems much fatigued, makes quick inspirations, and is rather faint.

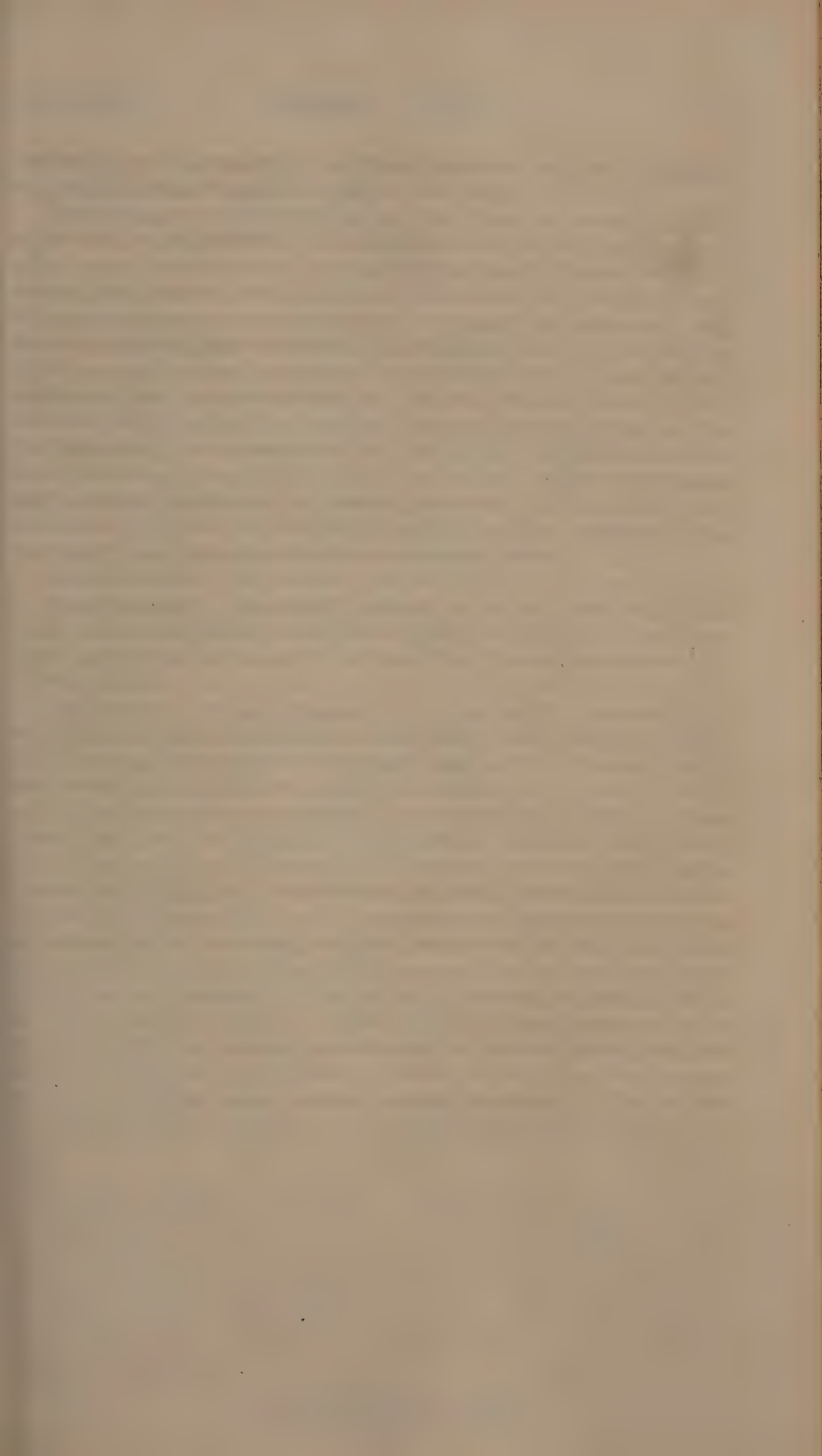
On the first coming on of the disease there is little or no expectoration, or, if any, it consists only of thin mucus ; and as long as this is the case, the fits of coughing are frequent and of considerable duration ; but on the expectoration becoming free and copious, the fits of coughing are less frequent, as well as of shorter continuance.

By the violence of coughing, the free transmission of blood through the lungs is somewhat interrupted, as likewise the free return of the blood from the head, which produces that turgescence and suffusion of the face which commonly attend the attack ; and in some instances brings on a hæmorrhage either from the nose or ears.

The disease having arrived at its height, usually continues for some weeks longer, and at length goes off gradually. In some cases it is however protracted for several months.

Although the whooping cough often proves tedious, and is liable to return with violence on any fresh exposure to cold, when not entirely removed, it nevertheless is seldom fatal, except to very young children, who are always likely to suffer more from it than those of a more advanced age. The danger seems indeed always to be in proportion to the youth of the person, and the degree of fever and difficulty of breathing which accompany the disease, as likewise the state of debility which prevails.

It has been known in some instances to terminate in apoplexy and suffocation. In some it lays the foundation for asthma and phthisis pulmonalis. If the fits are put an end to by vomiting, it may be regarded as a favourable symptom, as may likewise the



taking place of a moderate and free expectoration, or the ensuing of a slight hæmorrhage from the nose or ears.

Dissections of those who die of the whooping cough usually shew the consequences of the organs of respiration having been affected, and particularly those parts which are the seat of catarrh; hence the mucous membranes of the trachea and bronchiæ are commonly found in a morbid state. In many instances the lungs have exhibited highly morbid appearances, the trachea and its ramifications bearing vestiges of recent inflammation, and the air-cells and the bronchiæ, near to their bifurcation, filled with a whitish purulent-looking mucus. Serous accumulation in the pericardium is also frequently met with. In some instances the lungs have been found adhering to the pleura. When the disease has been long protracted, or has degenerated into pulmonary consumption, asthma, or visceral obstructions, the glands of the mesentery are found in a hard and enlarged state.

In the treatment of pertussis, we are, in its first or early stage, to moderate its violence, and palliate the urgent symptoms; and at an advanced period, to arrest its progress, and put a stop to it by suitable remedies, sooner, perhaps, than it would spontaneously have ceased.

In all severe cases of pertussis, where the cough is accompanied with a difficulty of breathing, or full pulse, much heat, and other febrile symptoms, early venesection ought never to be neglected*, particularly in children of a full plethoric habit. As soon as the cough becomes severe, we should draw off blood liberally at one time, which will often enable us to prevent mischief, and render the disease mild in its progress; but upon the accession of febrile paroxysms and a hurried respiration, which indicate a considerable degree of inflammation in the mucous membrane, or where the inflammation has extended to the substance of the lungs, and thus produced, in combination with those of the whooping cough, symptoms of pneumonia, this remedy becomes indispensable to the safety of the patient. Under these circumstances we must not be satisfied with a single bleeding; it should be repeated in sufficient quantities until the symptoms are under control, or we are convinced that amendment is beyond its power. The failure of venesection in pertussis may very often be attributed to its being resorted to at too late a period, or its being too sparingly used.

In milder attacks of the disease, where the cough and difficulty of breathing are more moderate, but still severe enough to occasion a determination to the head, it may be advisable to take away some blood by applying a sufficient number of leeches to the chest, instead of resorting to venesection; and if the dyspnœa and determination of blood to the head are not lessened in due time, the application should be repeated. Indeed, in such cases,

* See Dr. Watt's Work on Pertussis.

epistaxis sometimes arises naturally, and never fails to afford the child considerable relief. In common cases of pertussis, unattended by febrile paroxysms or dyspnœa, bleeding of any kind will be unnecessary.

Where there is much difficulty of breathing, the application of a blister to the chest will be highly proper at the commencement of the disease.

Some practitioners have recommended the lower region of the stomach to be rubbed very frequently with a stimulating embrocation*, covering the part afterwards with flannel. Inhaling the steam of warm water with an addition of vinegar or æther twice or thrice a day, may be of service.

The body being usually very costive, it will be necessary to have recourse to gentle laxatives, such as an infusion of senna with manna, &c., to remove it. In many instances an attention to diet may probably be sufficient to answer the purpose of removing or preventing this symptom; and therefore stewed prunes, roasted apples, &c., may be given, which things children take very readily.

Emetics administered frequently, have been found the most useful of all remedies in whooping cough, for which reason they ought never to be neglected; and as children may easily be deceived by what has no appearance of medicine, a solution of tartarized antimony† seems the most proper for the occasion. The best way, however, will be to give about a table-spoonful every fifteen minutes or so, until it takes effect, as dangerous consequences might ensue from the medicine happening to operate harshly, and producing much vomiting, which in some cases a very small quantity of it is apt to do. Where the patient is grown up to an adult state, an emetic of the wine of antimony or ipecacuanha, or of oxymel of squills, may be substituted.

A medicine composed of opium, ipecacuanha, and the carbonate of soda, is recommended by Dr. Pearson‡ to be given in pertussis, after the accumulated phlegm has been brought away by an antimonial emetic. He advises it in the following proportions to a child between one and two years, viz. one drop of the tincture of opium, five drops of ipecacuanha wine, and two grains of the carbonate of soda, which may be made up into a small draught with syrup and water, and be repeated every fourth hour for several

‡ See Medico-Chirurgical Transactions, art. 3.

- * 1. R Antimon. Tartarizat. ʒj.
Aq. Puræ, f. ʒij.
Tinct. Cantharid. f. ʒss. M.

ft. Embrocatio.

- † 2. R Antimon. Tartarizat. gr. iij.

Aq. Puræ, f. ʒvj.
Syr. Simpl. f. ʒij. M.

ft. Solutio.

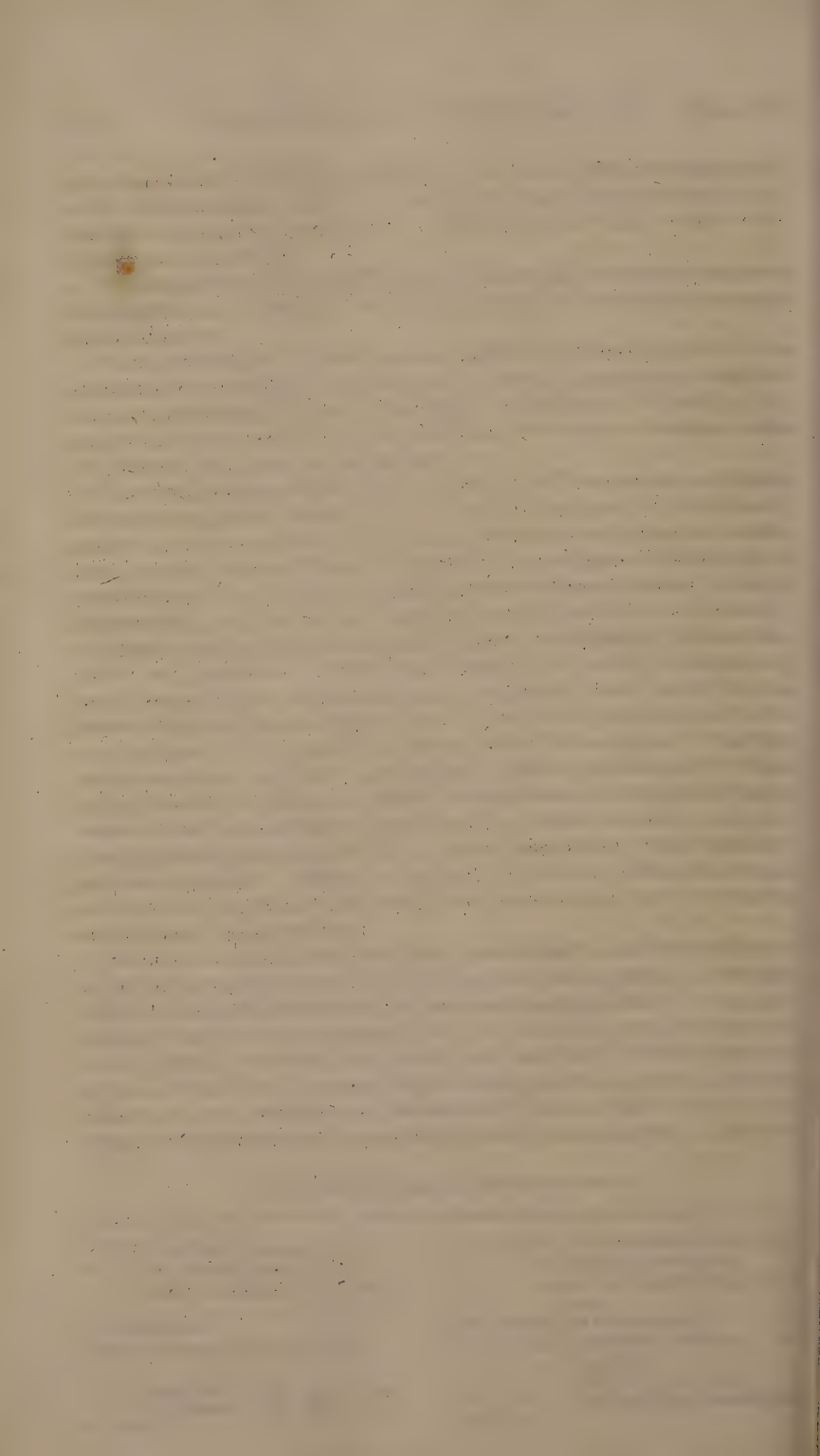
- 1. Take Tartarized Antimony, one scruple.
Pure Water, two ounces.
Tincture of Spanish Fly, half an ounce.

Mix them for an Embrocation.

- † 2. Take Tartarized Antimony, three grains.
Pure Water, six ounces.
Common Syrup, two drachms.

Mix them.





days; taking care to remove costiveness, whenever it occurs, by submuriate of mercury and rhubarb. Dr. Pearson is of opinion; that without the soda the preparations of ipecacuanha and opium would not be equally efficacious, and was led to employ it by the sour smell of the slimy fluid brought up by vomiting; but he suspects that it has an influence beyond that of correcting acidity.

Bathing the feet frequently in warm water has been supposed to afford relief in many cases. A tepid bath is sometimes serviceable.

The acetate of lead has been lately recommended in the whooping cough, and is said to relieve the symptoms of the disease very speedily, without producing any bad effects on the stomach and bowels. It may be given as in the formula inserted below*.

Exciting a slight degree of strangury has been attended with a good effect in some instances of pertussis. A combination of tinctura cantharidis, and tinctura camphoræ composita†, may be used for this purpose; giving it in doses of about fifteen drops, repeated every three or four hours, until some slight effect of this nature is produced, when the dose may either be lessened, or be given at longer intervals. Its efficacy most likely is owing to the counter-irritation which it excites.

For obviating the fatal tendency of the disease, and putting it into a safe train, the remedies which have been advised are evidently the most proper; but in its second stage, where it may be considered as continuing from the power of habit alone, all danger and violence being over, we must alter the plan of treatment, and have recourse to antispasmodics and tonics.

Of the first class, musk, castor, assafoetida, oleum succini, camphor, and opium, have principally been used; but their effects seem rather doubtful; and as they are all nauseous medicines, particularly the first three, it may not be easy to persuade children to take them.

* 3. R Plumbi Acetatis, gr. ij.—v.

Aq. Rosæ, f. ʒij.

Syrup. Violæ, f. ʒij. M.

ft. Mistura.

Capiat cochl. parvulum 4ta vel 5ta quaque hora.

† 4. R Tinct. Camphoræ Compos. f. ʒj.

— Cantharidis, f. ʒij. M.

Vel,

5. R Decoct. Cinchon. f. ʒijss.

Tinct. Cantharidis, ℥ xxvj.

— Camphor. Compos. f. ʒss. M.

Capiat cochleare medium quartis horis.

* 3. Take Acetate of Lead, two to five grains.

Rose Water, two ounces.

Syrup of Violets, two drachms.

Of this mixture a tea-spoonful may be taken every fourth or fifth hour.

† 4. Take Compound Tincture of Camphor, one ounce.

Tincture of Spanish Fly, two drachms.

Or,

5. Take Decoction of Peruvian Bark, three ounces and a half.

Tincture of Spanish Fly, forty drops.

Compound Tincture of Camphor, half an ounce.

Of this mixture let a dessert-spoonful be taken every four hours.

The uncertainty of the dose of opium, as well as the inconvenient effects produced by it on children, operate somewhat against the internal use of this drug, but its external use promises much benefit. In order to disguise tincture of opium, a few drops of æther may be added, and in this way it may be employed as an embrocation twice or thrice a day over the chest and stomach.

Artificial musk is a medicine which is reported to have been given in the whooping cough with the most decided advantage, even when other remedies have failed. A small quantity may be dissolved in a little rectified spirit, and about three or four drops be given twice a day, gradually increasing the dose to six, thrice in the twenty-four hours.

Hemlock has been administered in this disease as a narcotic, and frequently with success. In a few cases where I made trial of it, some advantage seemed to be obtained from its use; but as I gave it combined with other remedies as below*, probably it was not entitled to the whole merit.

The tincture of digitalis is another medicine which has of late been recommended in the whooping cough. I have prescribed it in a few cases with seeming advantage. Combining it with opium might perhaps increase its efficacy. Hyoscyamus has likewise been proposed as a remedy in pertussis. It may be given combined with the antimonial solution †, regulating the dose by the age of the child. We may begin with four or five drops, repeated four times a day, gradually increasing the quantity till a slight degree of nausea takes place.

Belladonna has been much employed on the Continent by Hufeland, and others, in pertussis, and is said by them to have produced most excellent effects, by greatly diminishing the force, violence, frequency, and duration of the accessions of this distressing cough, and by entirely removing the disease in a very short space of time. The dose is a quarter of a grain of the powdered root, with a few grains of sugar, morning and night, to children under one year; to

- 6. R Extract. Conii, gr. j.—ij.

Decoct. Cort. Cinchon. f. ℥j.

Tinct. Opii, ℥ ij. M.

Fiat haustus, ter in die sumendus.

Vel,

- 7. R Extract. Cinchon. gr. xxxvi.

——Conii, gr. xij.

Syrup. q. s. M.

ft. Massa, in pilulas xij. distribuenda, quarum unam capiat bis terve in die.

- † 8. R Vini Antimon. Tartarizat. f. ℥i.

Extract. Hyoscyami, ℥ij. Solve.

- 6. Take Extract of Hemlock, one or two grains.

Decoction of Peruvian Bark, one ounce.

Tincture of Opium, five drops.

Mix them, to be taken as a draught three times a day.

Or,

- 7. Take Extract of Bark, thirty-six grains.

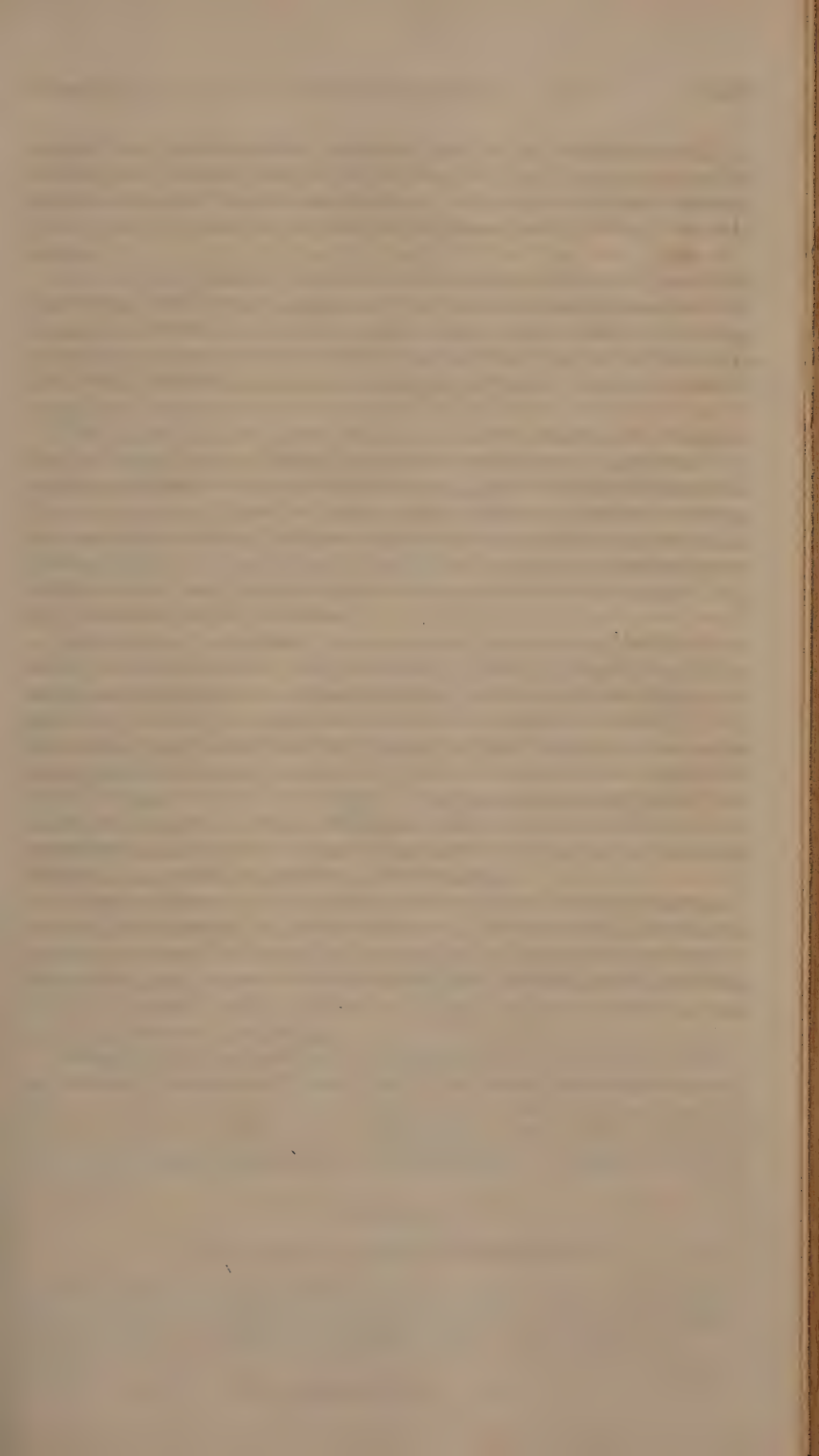
——Hemlock, twelve grains.

Syrup, a sufficiency to form the mass, which is to be divided into twelve pills, whereof one is to be taken twice or thrice a day.

- † 8. Take Wine of Tartarized Antimony, one ounce.

Extract of Henbane, two scruples.

Dissolve the latter in the former.



those from two to three years of age, half a grain twice in the twenty-four hours; and to those from four to six years of age, a grain and a half in the same time. The dose may be enlarged every two or three days until the increase equals half of the first dose.

The hydro-cyanic (prussic) acid has been used with great success in the whooping cough, as well as in other spasmodic dry coughs; (for the mode of administering it, see Phthisis;) but the dose for children ought never to exceed from four to six drops in the twenty-four hours, and should be given in divided doses of one drop in each.

To take off the irritation from the mucous membrane, which is the principal seat of the disease, as well as to strengthen the general habit, it will be advisable to employ the bark of cinchona. It may be given joined with the other remedies; but as it is often impossible to persuade children to take it in substance, we must be content with substituting a decoction or strong infusion of it. Other tonics, such as the various preparations of steel, zinc, &c. may likewise be administered.

Arsenic has lately been recommended in pertussis by Mr. Simmons, of Manchester*; and he asserts that it is attended with the most salutary effects, moderating the symptoms in a few days, and generally making a complete cure in the space of a fortnight. It has been given to children of a year old with safety, in the doses recommended by the late Dr. Fowler, of Stafford, (see Intermittents,) whose solution was used. It appears, however, that Mr. Simmons employed venesection and emetics occasionally; and he recommends, after the solution has been omitted for a week, to repeat it, in order to guard against a relapse.

A frequent change of air, having always been found very serviceable in this disease, ought therefore to be advised. A flannel waistcoat should be worn by the patient, as no doubt it promotes absorption, and prevents the vicissitudes of the climate taking that effect on the skin which we know it does, acting thereby as an exciting cause of coughing.

Young children should lie with their heads and shoulders raised, and should be cautiously watched, that when the cough occurs they may be held up, so as to stand upon their feet, bending a little forward to guard against suffocation. Their diet should be light, and of easy digestion, and mucilaginous diluents should be taken freely.

PYROSIS, OR WATER-BRASH.

A DISCHARGE of a thin, watery, or glairy fluid from the stomach, with eructations, and likewise a sense of burning heat in the epigastric region, are the chief characteristics of this disease.

* See Annals of Medicine for 1797.

It principally attacks those of a middle age, and more frequently affects females than males, particularly the unmarried. Those who are afflicted with fluor albus have been found to be much predisposed to it.

Being a disease not much known, and occurring but seldom, its causes have not been properly ascertained, but a low diet has been ascribed as being apt to give rise to it. The application of cold to the lower extremities, and distressing emotions of the mind, are likewise enumerated among its occasional causes.

The fits of pyrosis usually come on in the morning and forenoon, when the stomach is empty; and the first symptom which the patient perceives is a pain at the pit of the stomach, with a sense of constriction, as if it was drawn towards the back, and this is usually much increased by an erect posture. The pain, after proving severe, and continuing for some time, is followed by eructations and the discharge of a considerable quantity of a thin watery fluid, sometimes of an acid taste, but often quite insipid. In some instances however, it is very ropy, and of an appearance somewhat similar to the white of an egg, as happened in a case which some time ago came under my observation.

On a frequent repetition of the eructations and discharge, the fit at length goes off.

This disease rarely proves fatal, but is often tedious and troublesome to remove, being apt to recur occasionally a long time after it has once taken place.

For its cure no certain method has yet been proposed; but its fits are relieved by antispasmodics, such as æther, musk, castor, ammonia, oleum cajeputæ, opium, and the chewing or smoking of tobacco. In the intervals the cinchona, with the acidum sulphuricum dilutum, chalybeates, and other tonics, will be advisable. To carry off the offending fluid or mucus, I am of opinion that we may employ mild purgatives* about twice a week with advantage. As adjuvants will be occasionally serviceable, magnesia and alkalies (especially ammonia) will correct acidity, and relieve the heartburn and other dyspeptic symptoms.

In pyrosis, as well as in gastrodynia and other like affections of the stomach, the oxyd of bismuth has been found to afford much relief, interposing now and then gentle aperients. It appears to be a remedy recommended on the ground of safety as well as utility. An adult may take five grains of it with about a scruple of gum tragacanth three times a day.

* 1. R. Hydrargyri Submur. gr. ij.

Pulv. Antimon. gr. j.

Extract. Colocynth. gr. x.

Syrup. Rhamni, q. s. M.

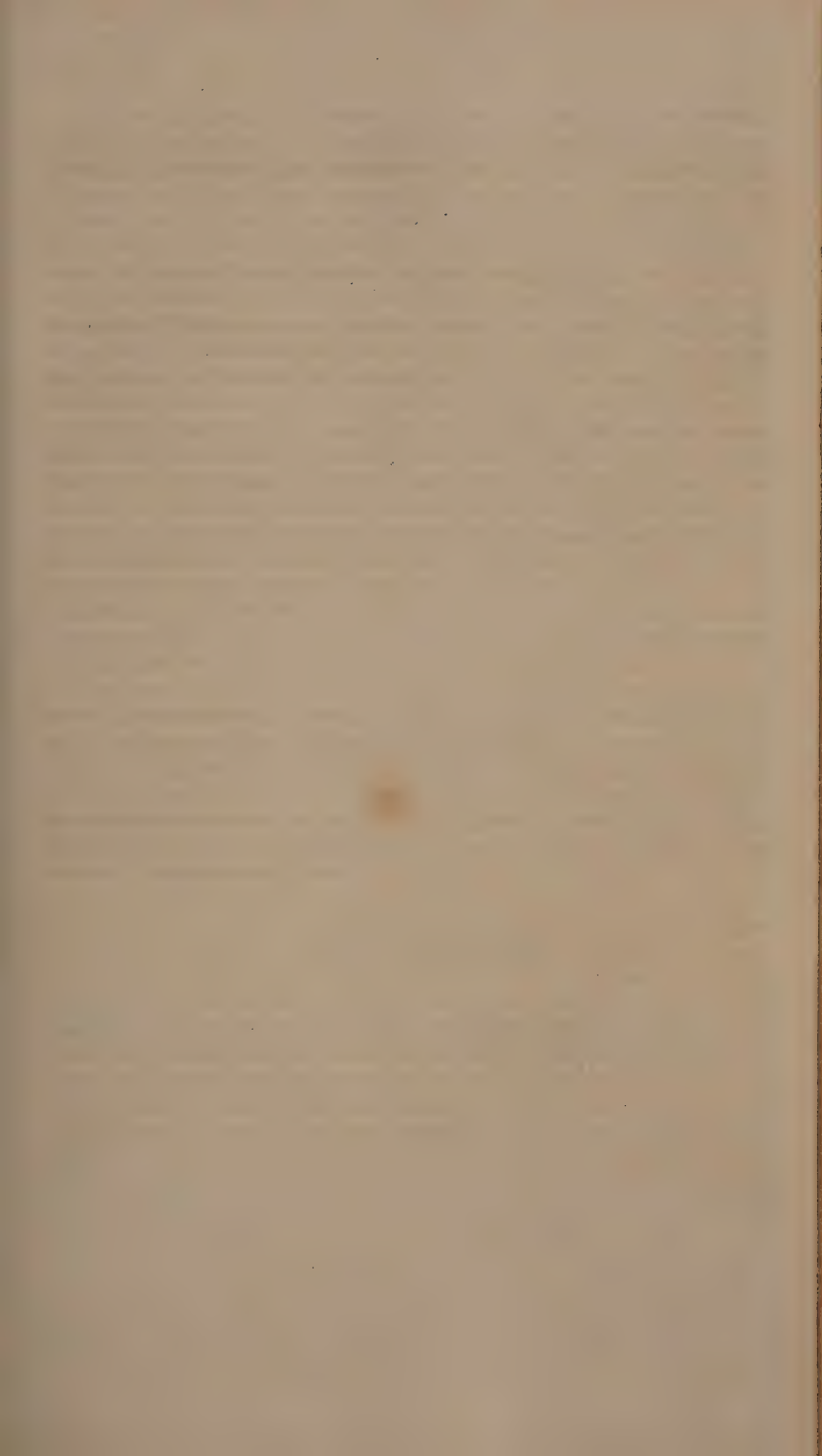
Fiant pilulæ iij. pro dos.

* 1. Take Submuriate of Mercury, two grains.

Antimonial Powder, one grain.

Extract of Colocynth, ten grains.

Syrup of Buckthorn, a sufficiency to form the mass, which is to be made into three pills, and taken at once.





A case of pyrosis, accompanied by gastrodynia of a year's standing, is recorded in Dr. Bardsley's Medical Reports, which was effectually removed by the oxyd of bismuth in a very short time. The complaint had been so constant and severe as to prevent the patient from following his occupation as a weaver. The pain was fixed and dull, and the quantity of acid discharged from the stomach, in a watery form, was abundant. After clearing the stomach with an active emetic, the bowels were emptied by castor oil, and the patient then entered upon the bismuth. He took twenty grains of a powder consisting of one part of the oxyd and five of gum tragacanth thrice a day for the space of a week, and then increased the dose gradually to forty grains. A short time effected the removal of the pyrosis. The bismuth was then discontinued, and the cinchona with sulphuric acid substituted, which soon completed the cure. It appears likewise that some other cases of pyrosis, accompanied with spasmodic pains, were treated with uniform success. An obstinate case of the disease, accompanied by gastrodynia, lately came under my care, and was perfectly cured by the oxyd of bismuth in conjunction with stomachic bitters.

Linnæus, by whom pyrosis seems first to have been noticed, recommends a use of the *nux vomica*: the dose is from ten grains to a scruple three times a day.

The case to which I have alluded in the preceding page, and in which there was a discharge of a ropy fluid, was at first treated with antispasmodics; but these being attended with no good effect, the physician who was called in advised the use of the sulphate of zinc combined with opium and the extract of cinchona bark, which seemed at first to be wonderfully efficacious; but the disease shortly afterwards returned, and the patient having lost confidence in the remedy, it was discontinued.

ANGINA PECTORIS.

AN acute constrictory pain at the lower end of the sternum, inclining rather on the left side, and extending up into the left arm, accompanied with great anxiety, violent palpitations at the heart, laborious breathing, and a sense of suffocation, are the characteristic symptoms of this disease.

Angina pectoris appears in general to be connected with a full habit, and an accumulation of fat about the heart and in the cellular membrane. It has appeared in some instances to have a connexion with suppressed discharges. Mental emotion seems to be a powerful predisposing cause of the disease.

It is found to attack men much more frequently than women, particularly those who have short necks, who are inclinable to corpulency, and who at the same time lead an inactive or sedentary life. In most instances the attacks are sudden, and occur in those who have previously enjoyed good health. In a few cases spasms

of the stomach, indigestion, and pains in the limbs, are not unusual, which are for the most part removed, or greatly diminished in violence, on the appearance of the disease. Although angina pectoris is sometimes met with in persons under the age of twenty, still it more frequently occurs in those who are between forty and fifty.

In slight cases, and in the first stage of the disorder, the fit comes on by going up hill, up stairs, or by walking at a quick pace, after a hearty meal; but as the disease advances, or becomes more violent, the paroxysms are apt to be excited by certain passions of the mind, by repletion of the stomach, by walking, by riding on horseback, or in a carriage, or by sneezing, coughing, speaking, or straining at stool. In some cases they attack the patient from two to four in the morning, or while sitting or standing, without any previous exertion or obvious cause. On a sudden he is seized with an acute pain in the breast, or rather at the extremity of the sternum, inclining to the left side, and extending up into the arm as far as the insertion of the deltoid muscle, accompanied by a sense of suffocation, great anxiety, and an idea that its continuance or increase would certainly be fatal. The paroxysm seems to consist very much in an impediment or suspension of the vital action of the heart.

In the first stage of the disease the uneasy sensation at the end of the sternum, with the other unpleasant symptoms which seemed to threaten a total suspension of life by a perseverance in exertion, usually go off upon the person's standing still, or turning from the wind; but in a more advanced stage they do not so readily recede; the paroxysms make their attack in the night, they are much more violent, and in a few cases have continued for several days. During the fit the pulse sinks in a greater degree, and becomes irregular, but in some instances it is not much disturbed; the face and extremities are pale, and bathed in a cold sweat, and for awhile the patient is perhaps deprived of the powers of sense and voluntary motion. Sometimes the stomach is morbidly affected, becomes unusually irritable, and rejects whatever is swallowed. The disease having recurred more or less frequently during the space of some years, a violent attack at last puts a sudden period to his existence. He dies after having suffered all the agonies of dissolution; for this is a complaint in which, during the fit, there are the most overwhelming sensations and apprehensions of instant death.

Angina pectoris had passed unnoticed among practitioners, until Dr. Heberden published a description of it many years ago in the Transactions of the College of Physicians of London; since which many gentlemen of eminence in their profession have attempted to investigate its nature, and have obliged us with their observations, particularly Drs. Percival, Fothergill, Wall, and Black*. By

* See his Chirurgical and Pathological Reports.

many of them it has been judged spasmodic. The late Dr. Parry, who has published* his sentiments on it, was of opinion, however, that it is in reality a case of fainting or syncope, which Dr. Cullen defines "*motus cordis imminutus, vel aliquamdiu quiescens*," and as differing from the common syncope only in being preceded by an unusual degree of anxiety or pain in the region of the heart, and in being readily excited, during a state of apparent health, by any general exertion of the muscles, more especially that of walking. The supposed cause of angina pectoris (for which he has thought proper to substitute the name of syncope anginosa) is referred by him to a diseased state (generally ossification) of the coronary arteries of the heart.

The rigidity of the coronary arteries thus induced may act, he thinks, proportionably to the extent of the ossification, as a mechanical impediment to the free motion of the heart; and though a quantity of blood may circulate through these arteries sufficient to nourish the heart, as appears in some instances, from the size and firmness of that organ, yet there may probably be less than what is requisite for ready and vigorous action. Hence, though a heart so diseased may be fit for the purposes of common circulation during a state of bodily and mental tranquillity, and of health otherwise good; yet when any unusual exertion is required, its powers may fail under the new and extraordinary demand. In conformity with this notion, Dr. Parry endeavours to shew that the chief symptoms of the disease are the effect of blood retarded and accumulated in the cavities of the heart and neighbouring large vessels; and that the causes exciting the paroxysms are those which produce this accumulation; either by mechanical pressure, or by stimulating in an excessive degree the circulating system; in consequence of which the heart, weakened by the mal-organization, readily sinks into a state of quiescence, while the blood continues to advance in the veins. After this quiescence has continued for a certain period, the heart may recover its irritability, so as again to carry on the circulation, in a more or less perfect degree, from the operation of the usual stimuli; or death may at length ensue, from a remediless degree of inirritability in the heart. Such is Dr. Parry's theory.

In my opinion, the primary or original cause of angina pectoris in most cases is either ossification of the coronaries, or some organic lesion (usually of an osseous nature) existing at the origin of the circulation. In some instances an ossification, more or less complete, of the cartilages of the ribs, also accompanies this malady.

The disease in question has been considered by some German writers, as also by Dr. Darwin, as a species of asthma; by the latter it has been named *asthma dolorificum*. Dr. Hosack, Professor of the Theory and Practice of Physic and Clinical Medicine in the Uni-

* See his Treatise on Angina Pectoris.

versity of New York, is of opinion that the disease proceeds from plethora of the blood-vessels, more especially from a disproportionate accumulation in the heart and large vessels*. The vast accumulations of fat, the effusion of water in the thorax, the distended state of the vessels, and even the bony deposits occasionally met with in the valves and vessels of the heart, he is induced to consider as the effects of such plethora.

We should always look on angina pectoris as attended with a considerable degree of danger at an advanced period of life, and where the paroxysms are frequent or violent; and it usually happens that the person is carried off suddenly. When it really depends upon an ossification of the coronary arteries, or any organic lesion existing at the origin of the circulation, it is evident that we can never expect to effect a cure. In young persons, and when the disease is gradual in its progress, or depends on mechanical pressure, as from obesity, or effused fluid in the pericardium, a slight hope of recovery may be entertained.

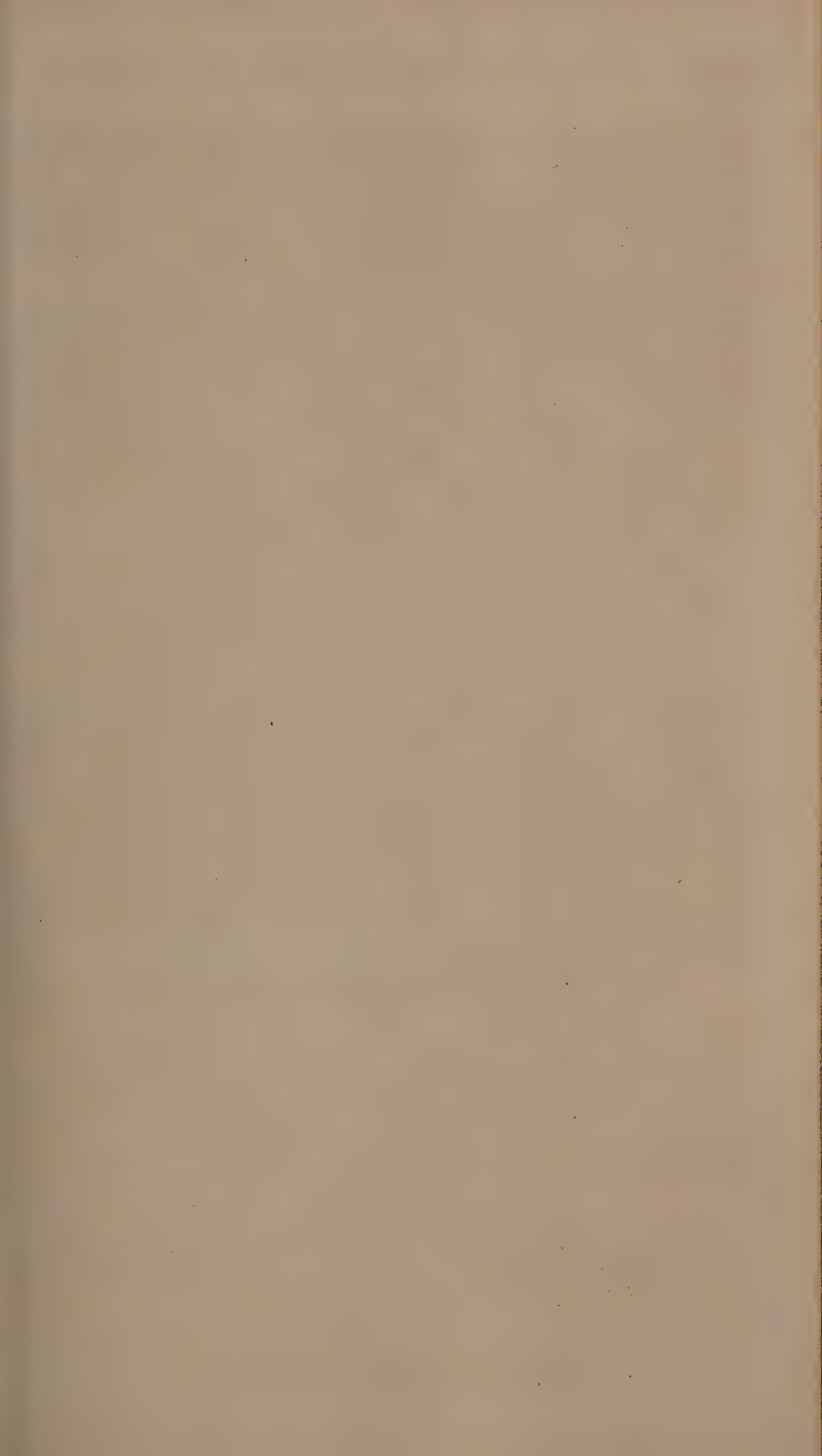
In some instances, on inspecting the body after death, the cellular membrane has been found loaded with fat; in the bags of the pleura, and that of the pericardium, a considerable quantity of water has been lodged; and in others the heart itself has been discovered covered with fat, large, flabby, and soft. On the internal surface of the aorta, near its origin, osseous scales have been perceived, and in many instances the coronary arteries are ossified nearly throughout their whole extent. Various small ossifications in different parts of the heart and great vessels, have been a frequent occurrence in dissections relating to this disorder. There are four cases recorded in the seventh volume of the *Medico-Chirurgical Transactions*, in every one of which there was an ossification more or less complete of the cartilages of the ribs†, which circumstance is curious, and would almost indicate the existence of an ossific diathesis, shewing its influence beyond the limits of the arterial system.

During the paroxysms of angina pectoris, the patient is to be laid in a somewhat recumbent posture, and if there be a great degree of oppression and constriction about the chest, we are, even although the pulse be faltering and weak, to draw off a few ounces of blood; for in some cases we find that the heart is prevented from beginning to act again by the blood with which it is overloaded. Under this situation, by opening the jugular vein, and gently pressing on the chest, we are to endeavour to expel a portion of the blood from the right side of the heart, and for the same reason that the lancet is sometimes used in suspended animation. Our decided object should be to allow the heart slowly to recover its lost energy.

Every circumstance in the pathology of angina pectoris evinces

* See American Med. and Phil. Register, vol. ii. p. 366.

† See also Dr. Black's Clinical and Pathological Reports.



that the paroxysm is brought on rather by an accumulation of blood about the heart than by any unusual weakness of the organ at the moment; and therefore venesection appears to be the first remedy that should be tried, and this may be followed up by exciting gentle vomiting, which we know powerfully diffuses the blood from the centre to the surface of the body.

It has been observed by Dr. Parry, and justly, that the extreme weakness of the pulse and coldness of the skin do not contraindicate bleeding. He is of opinion, that in the paroxysms blood should be taken from a small orifice, the patient being placed in the horizontal position, while the physician is to keep his finger on the pulse, to decide the limits to which venesection is carried.

During the paroxysm we may employ rubefacient frictions and external heat to the lower extremities, as being preferable to stimulants administered internally, which should be used with caution, and only to remove flatulency from the stomach. The carminative medicines, agreeable to the annexed formulæ*, may be prescribed for this purpose, when judged necessary. Possibly a tepid bath, by eliciting the blood to the surface of the body, might prove useful in relieving the central organ of circulation from the load with which it is oppressed.

Perfect quietude, a free access of pure air, the supine posture and frictions of the extremities, will assist the heart in recovering its accustomed rate of action. Should the paroxysm at any time assume the appearance of actual deliquium, it may be expedient to apply the spirit of ammonia to the nose, or to sprinkle the face, neck, and breast, with vinegar and water, or with sulphuric æther.

If the cessation of the vital principle continues long, or appears very complete, the application of a large blister to the chest will be advisable. In very desperate cases we may venture to pass slight electric shocks through it, rubbing the limbs at the same time with stimulating embrocations. Our exertions are to be continued on such occasions until the patient is reanimated, or unequivocal signs of real death are obvious.

* 1. R Aq. Ment. Pip.
Spirit. Carui, aa f. ʒss.

—— Æther. Sulph. ℥ xx.

Tinct. Lav. C. f. ℥ x. M.

ft. Haustus.

Vel,

2. R Aq. Pimentæ, f. ʒvj.
Tinct. Card. C. f. ʒij.

—— Cinnam. C. f. ʒj.

Spirit. Ammon. Aromat. ℥ x. M.

ft. Haustus.

* 1. Take Peppermint Water,
Spirit of Caraway, of each half
an ounce.

—— Sulphuric Æther, thirty
drops.

Compound Tincture of Lavender,
fifteen drops.

Mix them for a draught.

Or,

2. Take Pimenta Water, six drachms.

Compound Tincture of Carda-
moms, two drachms.

—— Cinnamon,
one drachm.

Aromatic Spirit of Ammonia, fif-
teen drops.

Mix them to be taken as a draught.

With the view of rousing the patient during a state of fainting, or whilst he is just recovering from this condition, wine and other cordials have been administered by some practitioners, but there is reason to doubt if they have proved beneficial *. In the case of the late Mr. John Hunter, and reported by Sir Everard Home, it was evident that stimuli were not attended with a good effect. Both at the commencement of the spasm, and while it was on him, it appears that recourse was had to the camphor julep, but no relief was obtained. He tried Hoffman's anodyne liquor in the dose of a tea-spoonful, but not finding it to answer alone, joined it to the camphor julep. The spasms, however, seemed to be more violent. One night he took twenty drops of the tincture of opium, which occasioned his head to be greatly confused the next day, but did not at all abate the spasms. Not having drank wine for four or five years, he was advised to try it, which he complied with, but found the spasms more readily brought on after using it than on those days on which he drank none. After eating a hearty meal they were more readily produced.

Where the sleep is interrupted considerably, the extract of hyoscyamus, or some of the preparations of the humulus lupulus, (see Mania,) may be tried instead of opium, should this drug produce an injurious effect.

It has been observed, that angina pectoris is a disease always attended with considerable danger, and in many instances has proved fatal under every mode of treatment. We are given, however, to understand, by Dr. Macbride †, that several cases of it have been treated with great success, and the disease radically removed, by inserting a large issue in each thigh. These, therefore, or instituting a sufficient and permanent drain from the region of the heart by means of a seton (which appears to be preferable to issues), should never be neglected; assisting its effects by abstinence, quietude of mind and body, very moderate exercise in the open air, antacids, such as soda and magnesia, gentle laxatives, and bitters conjoined with aromatics. In one case, with the view of correcting or draining off the irritating fluid, Dr. Macbride ordered instead of issues a mixture of lime water, with a little of the spiritus juniperi comp. and an alterative proportion of Huxham's antimonial wine, together with a plain, light, perspirable diet. From this course the patient was apparently mended, but it was not until after the insertion of a large issue in each thigh that he was restored to health.

Dr. Darwin likewise makes mention ‡, that four patients who laboured under angina pectoris in a severe degree, were all recovered, and continued well three or four years, by the use (as he believes) of issues on the inside of each thigh, being large

* See Observations on Diseases of the Heart, by Mr. Allen Burns.

† See Medical Observations and Inquiries, vol. vi.

‡ See Zoonomia, vol. iv. p. 43.

enough at first to contain two peas each, but afterwards only one. They took besides some slight antimonial medicine for a short time.

Two remarkable cases of this disease are recorded in the sixth volume of the Medical and Physical Journal, which were cured by applying pieces of calico to the sternum, wetted with a solution of tartarized antimony in the proportions mentioned below*, several times a day. The stimulus from this application produced an uncommon and violent eruption on the skin in a short time, having the peculiar malignant appearance of carbuncles, itching and smarting excessively, many of which suppurated, while hundreds were continually rising up, some as large as peas, others as small as pins' heads. As soon as the eruption appeared, considerable relief from the spasmodic affections was obtained in both instances, and the patients went on gradually recovering, after continuing the remedy two or three times a day for about a month.

Having pointed out the best means for moderating and removing the paroxysms of angina pectoris, it is proper to notice those from a rigid and steady adherence to which, such as are subject to its attacks will, in all probability, experience much benefit, and these be prevented from proceeding to any alarming extent.

The patient should sedulously shun every source of mental inquietude and irritation, and the circulation be vigilantly guarded from the influence of sudden gusts of passion. Moderate exercise in the open air, particularly on horseback, which will be preferable to walking and not likely to bring on a fit, if the rider will be content with a moderate pace, should daily and regularly be taken, but no violent or long-continued corporeal exertion should be attempted; nor should rising ground ever be ascended on foot without the utmost deliberation and care. Plain food, easily digestible, and not prone to fermentation in the stomach, should be made use of in small quantities at a time, being carefully masticated, and deliberately swallowed. All fermented liquors will be improper. Gastric distension is indeed a very frequent concomitant upon organic diseases of the heart, and a source of great uneasiness and distress to those who labour under them. The occurrence of this symptom may, however, be obviated by abstinence from fermentable aliment; and when existing, may be palliated or removed by the judicious exhibition of the mineral acids, by the carbonate of soda or potass, and by the aromatic spirit of ammonia in combination with bitters. Whenever the patient perceives any tendency to plenitude in the vascular system, he should rigidly adhere to a low and abstemious regimen, and occasionally take some purgative, such as the submuriate of

* 3. R Antimon. Tartariz. ʒj.
Aq. Fervent. Oj.
Spirit. Camphoræ, f. ʒss. M.

* 3. Take Tartarized Antimony, one drachm.
Warm Water, one pint.
Camphorated Spirit, half an ounce.
Mix them.

mercury and jalap, conjoined with a little ginger or any other aromatic. At all times the bowels should be kept regular, and one or two daily evacuations be procured. Some relief possibly may be obtained by keeping up a permanent counter-irritation and discharge on the surface, as near as possible to the seat of the disease, by means of a perpetual blister, or by a seton passed through the integuments over the region of the heart. Warm bathing and friction of the extremities might also prove useful, by promoting circulation in the limbs, and determining to the surface of the body, thereby diminishing the fulness of the heart and large vessels. As a medicine, pills composed of the carbonate of soda, sulphate of iron, and extract of gentian, may be taken twice a day with an infusion of ginger.

Although these several means may do much to procrastinate the fatal catastrophe in some cases, still they will prove inefficacious in others.

PALPITATIO, or PALPITATION.

THIS disease consists in a vehement and irregular motion of the heart, and is induced by organic affections, a morbid enlargement of the heart itself, or of the large vessels, a diminution of the cavities of its ventricles from inflammation or other causes, polypi, ossification of the aorta or other vessels, plethora, debility or mobility of the system, mal-conformation of the thorax, and many of the causes inducing syncope.

During the attacks the motion of the heart is performed with greater rapidity, and generally with more force than usual, which is not only to be felt with the hand, but may often be perceived by the eye, and in a few instances even be heard; there is frequently dyspnœa, a purplish hue of the lips and cheeks, and a great variety of anxious and painful sensations.

In some instances the complaint has terminated in death, but in many others it is merely symptomatic of hysteria and other nervous disorders, and therefore admits of a cure.

In the treatment of this disease, it should be our study, if possible, to find out the exciting cause, and to remove this. If it arises from plethora, bleeding with purgatives and the rest of the antiphlogistic course should be adopted; if from debility, stomachic bitters with chalybeates and cold bathing, &c. will be proper; when symptomatic of any nervous disorder, æther, castor, musk, and other antispasmodics, conjoined with tonics, will be advisable.

As the disease, however, arises from an organic affection of the heart itself in many instances, or of the aorta, or other large vessels connected with it, all that may be in our power in such cases will be to caution the patient against exposing herself or himself to such circumstances as may increase the action of the

sanguiferous system, particularly fits of passion, sudden surprises, violent exercise, or great exertions of the body.

ASTHMA.

THIS disease is a spasmodic affection of the lungs, which comes on by paroxysms most generally at night, and is attended by a frequent, difficult, and short respiration, together with a wheezing noise, tightness across the chest, and a cough; all of which symptoms are much increased when the patient is in a horizontal position.

Asthma rarely appears before the age of puberty, and seems to attack men more frequently than women, particularly those of a full habit, in whom it never fails, by frequent repetition, to occasion some degree of emaciation. Dyspepsia always prevails, and appears to be a very prominent feature in the predisposition. Its attacks are most frequent during the heats of summer, and in winter when heavy fogs or sharp cold winds prevail.

When the disease is attended with an accumulation and discharge of humours from the lungs, it is called the humid asthma; but when it is unaccompanied by any expectoration, it is known by the name of the dry or spasmodic asthma.

On the evening preceding an attack of asthma, the spirits are often much affected, and the person experiences a sense of fulness about the stomach, with lassitude, drowsiness, and a pain in the head. On the approach of the succeeding evening he perceives a sense of tightness and stricture across the breast, and a feeling of straitness in the lungs impeding respiration. The difficulty of breathing continuing to increase for some length of time, both inspiration and expiration are performed slowly, and with a wheezing noise; the speech becomes difficult and uneasy, a propensity to coughing succeeds, and the patient can no longer remain in a horizontal position, being as it were threatened with immediate suffocation.

These symptoms usually continue till towards the approach of morning, and then a remission commonly takes place; the breathing becomes less laborious and more full, and the person speaks and coughs with greater ease. If the cough is attended with a free expectoration of mucus, he experiences much relief, and soon falls asleep.

When he awakes in the morning, he still feels some degree of tightness across his breast, although his breathing is probably more free and easy, and he cannot bear the least motion without rendering this more difficult and uneasy; neither can he continue in bed, unless his head and shoulders are raised to a considerable height.

Towards evening he again becomes drowsy, is much troubled with flatulency in the stomach, and perceives a return of the diffi-

culty of breathing, which continues to increase gradually till it becomes as violent as on the night before.

After some nights passed in this way, the fits at length moderate, and suffer more considerable remissions, particularly when they are attended by a copious expectoration in the mornings, and that this continues from time to time throughout the day; and the disease going off at last, the patient enjoys his usual rest by night without further disturbance.

During the fits the pulse is not usually much affected, but in a few cases there is a frequency of it, with some degree of thirst, and other febrile symptoms. In some persons the face becomes turgid and flushed during the continuance of the fit, but more commonly it is pale and shrunk. Urine voided at the beginning of a fit is generally in considerable quantity, and with little colour or odour; but after the fit is over, what is voided is in the ordinary quantity, of a high colour, and sometimes deposits a sediment.

Asthma, but more particularly the spasmodic, is brought on by almost every thing which increases the action of the heart; and which stimulates and fills the vessels of the mucous membrane. Thus it is produced by intense heat, by lightness of air, by severe exercise, by strong mental emotions, by full meals, by stimulating drinks, by exposure to cold and atmospherical influence, and by certain effluvia, as those of hay, whether new or old, of sealing-wax, and other burning substances.

Congestions of blood, or of serous and pituitous humours in the lungs, noxious vapours arising from a decomposition of lead or arsenic, impure and smoky air, cold and foggy atmosphere, sudden changes of temperature, scrofulous, rheumatic, gouty, psoric and scorbutic acrimony; dyspepsia or irritation in some of the abdominal viscera, but particularly in the stomach: irritation of the bronchial system by ærial acrimony or other causes, suppression of long-accustomed evacuations, frequent catarrhal attacks, erratic gout, general debility, water in the chest, aneurisms, polypi, or concretions of grumous blood in the large vessels, and the like, are the causes from which this formidable disease may arise in different individuals. In some instances it proceeds from an hereditary predisposition, and in others from mal-conformation of the chest.

Asthma having once taken place, its fits are apt to return periodically, and more especially when excited by certain causes, such as by a sudden change from cold to warm weather, or from a heavier to a lighter atmosphere; by severe exercise of any kind which quickens the circulation of the blood; by an increased bulk of the stomach, either from too full a meal or from a collection of air in it; by exposures to cold, obstructing the perspiration, and thereby favouring an accumulation of blood in the lungs; by violent passions of the mind; by disagreeable odours; and by irritations of smoke, dust, and other subtile particles floating in the air.

A consequence of convulsive motions is the habit of repetition the muscles have contracted by laws peculiar to the animal economy; so asthma is believed to depend frequently upon this cause.

The proximate or immediate cause of the disease has, by Dr. Cullen, and most other writers, been supposed to be a preternatural or spasmodic constriction of the muscular fibres of the bronchiæ, which not only prevents their being so dilated as to admit of a free and full inspiration, but also gives them a rigidity, which interferes with a free and full expiration.

This doctrine has, however, been disputed by Dr. Bree, who, in a very ingenious treatise on this disease, offers it as his opinion, that irritation seated within the air-cavities, and arising either from an effusion of serum, or from aërial acrimony, is the true proximate cause of convulsive asthma. The mucus which is excreted in the course of the disease, and which has been looked upon by Dr. Cullen and others as only an effect, Dr. Bree views as a prominent cause of the paroxysm; or, when it is absent, only yielding to a different cause equally irritating to the organ, and exciting spasmodic contractions of the respiratory muscles.

Dr. Darwin says, that whatever may be the remote cause of the paroxysms of asthma, the immediate cause of the convulsive respiration, whether in the common asthma, or in what is termed the convulsive, which are perhaps only different degrees of the same disease, must be owing to violent voluntary exertions to relieve pain, as in other convulsions; and the increase of irritability to internal stimuli, or of sensibility during sleep, must occasion them to commence at this time.

Asthma usually diminishes as soon as a mucous secretion begins to take place, and is more speedily and effectually relieved by a spitting of blood. These facts are convincing proofs of a preternatural fulness of the vessels of the mucous membrane of the bronchiæ, so as to impede free respiration, and to produce all the symptoms of spasmodic asthma.

The sudden accession of the paroxysms generally after the first sleep, their returning at intervals, and the sense of constriction about the diaphragm, occasioning the patient to get into an erect posture, and to fly for relief to the cold air, will readily distinguish asthma from other diseases.

If the attacks of asthma are neither frequent nor severe, the constitution unimpaired, and the patient is young, there may be a possibility of removing the disease entirely; but where it comes on at an advanced period of life, has frequent paroxysms, and proceeds either from an hereditary predisposition, or from a condition of the body subject to serous defluxions, it will be impossible to eradicate it. By changing into other diseases, as consumption and hydrothorax, or by occasioning an aneurism of the heart or of some large vessel, it is apt to prove fatal; but without such occurrences it is by no means attended with much danger,

although it may seem in many instances to threaten almost immediate death by suffocation. Anasarous swellings of the lower extremities, and some degree of diabetes, are complaints which frequently attend on asthma, where it has been of long duration.

The respiration becoming suddenly quick and short, the pulse weak and irregular, paralysis of the arms, great depression of strength, a scanty secretion of urine, and frothing at the mouth, indicate extreme danger.

The inspection of dead bodies has thrown but little light either on the nature or cause of this disease. A series of observations from Morgagni, and the works of many other anatomists, have however proved the existence of extravasated serum in the vesicles of the lungs of asthmatics, in most instances. Where the disease has been of long continuance, various morbid affections of the system have been discovered on dissection.

In the treatment of asthma we should endeavour to moderate the violence of the paroxysms, and when they are subsided, to hinder their recurrence. With the view of preventing any danger from the difficult transmission of blood through the lungs, and of obviating the plethoric state of the system, which might be supposed to have a share in producing a turgescence of the blood in the lungs, it is a frequent practice to draw off blood during the paroxysm; but bleeding has proved highly injurious in almost every instance of the disease, by delaying the expectoration; and is certain to be attended with bad consequences, where asthma has arisen in elderly persons, or has been of long standing. In full plethoric habits, possibly cupping, or applying several leeches to the chest, might afford some relief.

On blood-letting, Dr. Bree makes the following judicious observations:—"Many doubts," he says, "occur on the propriety of bleeding in any species of this disease. Before the pulmonary vessels have attempted to relieve themselves by their exhaling orifices, blood may possibly be drawn with advantage; but when effusion has taken place, a certain debility is indicated, and a loss of contractile power in the coats of the vessels, which prudence will rather submit to during the fit, and attempt to remedy in the intermission. In this state of the disease, nature pursues the path best adapted to her circumstances: the escape of serous fluid gradually relieves the vessels, and respiration and absorption must be relied on, with a salutary cough, to clear the air-cells of the lymph. If evacuations of blood are directed, the sudden depletion of the vessels will leave their coats without the stimulus necessary to produce a contraction equal to the space which the blood had occupied; the heart will participate in the injury, and will also be deficient in vigour of contraction. If, therefore, blood is to be taken away, it should be drawn from the vessels at intervals, and in small portions, which would allow of the contractile power being exerted in proportion as the vessel loses its contents, and would not finally

take so much fluid away as would leave it without the stimulus of distension, so essential to the return of health.

“But bleeding is an imprudent operation in every species of asthma, unless it be the second. In the first species I have repeatedly directed it; but have never had reason to think that the paroxysm was shortened an hour by the loss of blood: and I have often been convinced that expectoration was delayed, and more dyspnœa remained in the intermission than was common after other paroxysms. In old people who have been used to the disorder, it is certainly injurious. In the second species there are occasional topical inflammations, which this operation may relieve; but if it is carried far, there is the strongest reason to apprehend that the patient may be plunged into asthma of the first species.”

That the reader may have a clear idea of Dr. Bree's meaning, it is necessary to say that he divides convulsive asthmas into four species:—

The first species, arising from pulmonic irritation of effused serum.

The second species, arising from pulmonic irritation of aërial acrimony.

The third species, arising from abdominal irritation in the stomach, uterus, or other viscera.

The fourth species, secondary and dependent upon habit, after irritation is removed from the thoracic or abdominal viscera.

Purging is attended with the same injurious effects as bleeding, in all species of this disease; but as asthmatics are hurt by an accumulation or stagnation of matters in the alimentary canal, so costiveness must be obviated by a proper attention to diet; and where this proves insufficient, by the employment of gentle laxatives, such as magnesia, with the addition of a few grains of rhubarb, as asthma will be relieved by gently opening the bowels. During a paroxysm, costiveness may be removed by an emollient clyster with an addition of assafoetida*, or the ol. terebinthinæ, which proves so efficacious in hysteria.

It might be attended with some danger to administer an emetic during a paroxysm of the asthma; particularly where the respiration is considerably impeded, the patient's strength much exhausted, or where there are symptoms of inflammation.

Blistering the chest and issues have been much employed in asthmatic cases, but they seem only to be serviceable in those which have arisen from the stoppage of some long-accustomed or habitual discharge, or in the complicated cases of old people. In

* 1. R Decoct. Malvæ Compos.

Misturæ Assafoetid. aa f. ʒv.

Ol. Ricini, f. ʒss. M.
ft. Enema.

* 1. Take Compound Decoction of Marsh-mallow,

Mixture of Assafoetida, of each
five ounces.

Castor Oil, half an ounce.

Mix them for a clyster.

pure spasmodic asthma they have not been found either to prevent or relieve the fit.

To moderate the severity of the paroxysms in asthma, we cannot employ a more powerful and efficacious mean of relief than the inhaling warm steam frequently from an inhaler, or the spout of a teapot. An infusion of chamomile flowers, with the addition of a little æther, may be used on the occasion, or the patient may inhale the vapour arising from a tea-spoonful of Hoffman's anodyne and another of tinctura opii, mixed with a little warm water.

In spasmodic asthma, smoking tobacco has in some cases proved very beneficial. Of late the stramonium, or thorn-apple, has been much employed in the same manner in spasmodic asthma, and from the striking relief procured by it, has excited considerable attention. The roots of the plant are chiefly used: these, after being dried in the shade, and beaten so as to separate the fibres, are to be cut into small pieces, and to be smoked in a common tobacco-pipe. The smoke is to be drawn as much as possible into the chest, where it usually occasions some degree of heat, followed by expectoration. There can be no doubt that it acts as a narcotic; but I have observed it to produce more powerful effects on the disease in question than the smoke of tobacco. As some unpleasant consequences have, however, attended on an improper use of stramonium, it has been suggested that every good property of this plant may be expected from a similar use of the common white poppy heads; the smoke of which, whether swallowed or inhaled, must be equally anodyne and less deleterious. Similar effects would probably result from the dried leaves of digitalis, and particularly in that species of asthma connected with œdematous ankles, irregular pulse, and other symptoms of hydrothorax.

Inhaling the vapour from tar under a state of liquefaction, as noticed under the head of Phthisis, has been attended with a pleasing effect in some cases of spasmodic asthma.

Under the supposition that asthma arises frequently from predisposition, or from a preternatural mobility or irritability of the lungs, antispasmodics have been much used to moderate the paroxysms. Of this class, æther and opium have been found most useful, and particularly the latter; but its value is frequently much enhanced by combining it with the former, as below*.

These medicines seem, however, to have no certain efficacy in shortening the paroxysms, except in those cases where the disease arises from a preternatural mobility or irritability of the lungs, or is continued from habit. In these instances they may prove highly serviceable, but in no others. The fetid gums, particularly assafœ-

* 2. R Misturæ Camphor. f. 3x.
Spirit. Æther. Sulphuric. ℥xxv.
—xl.
Tinct. Opii, ℥x. M.
ft. Haustus, 4ta vel 6ta quaq. hora sumendus.

* 2. Take Camphor Mixture, ten drachms.
Spirit of Sulphuric Æther, forty
to sixty drops.
Tincture of Opium, fifteen drops.
Make them into a draught, to be taken every
four or six hours.

tida*, have also been much employed in those cases of asthma where a spasmodic difficulty of breathing is obvious.

Dr. Bree mentions, "that having been afflicted with asthma, he took during a paroxysm of the first species four grains of solid opium, which produced nearly an apoplectic stupor for two days. After a few hours, the most debilitating sickness came on, with incessant efforts to puke. The labour of the respiratory muscles was abated, but the wheezing evidently increased; a countenance more turgid than usual, and intense headach attended. The pulse was increased in strength and quickness for a few hours, but then sunk into great weakness."

He further observes, "that the paroxysm shewed itself four hours earlier than usual the next day, and two grains more were taken when it was perceived to commence; respiratory labour seemed again to abate, but the anxiety increased to an alarming degree as the stupor became less. The pulse was now weaker, and frequently irregular. Loose motions succeeded, and a general sweat. The energy of the paroxysm then revived with exquisite distress. A medical friend, who attended with great care to the progress of those trials, became alarmed, and endeavoured to promote puking without effect. Blisters were applied, and draughts of vinegar and pepper were given, interposed with strong coffee and mustard. The patient was at last brought back to a state more usual in former paroxysms: but with every care, the exacerbations were no fewer than nine, before expectoration, becoming gradually more copious, concluded the fit. Notwithstanding the bad success of this experiment, opium was used in another paroxysm after an active vomit, and bad consequences still ensued, though not so extensively."

As the free passage of air to and from the lungs is obstructed in the first species of asthma by a lodgment of mucous matter, the expulsion of this should be promoted by pectorals, such as gum ammoniac, squills, &c., combined as below†, or as prescribed under the head of Peripneumony; but oily demulcents ought to

* 3. R Misturæ Assafœtidæ,
Camphoræ, āā ʒvj.

Spirit. Æther. Sulph. ℥ xx.

Tinct. Opii, ℥ vj. M.

ft. Haustus, quartis vel sextis horis capiendus.

† 4. R Misturæ Ammon. f. ʒv.
Oxymel. Scillæ, f. ʒiij.
Vini Antimon. Tartariz. ℥ xxvj.

Acidi Acetic. dilut. f. ʒss. M.

ft. Mistura, cujus sumat cochl. ij. subinde,
vel argenti tusse aut dyspnœa.

* 3. Take Assafœtida Mixture,
Camphor Mixture, of each six
drachms.

Spirit of Sulphuric Æther, thirty
drops.

Tincture of Opium, nine drops.

Mix them, and let this draught be taken
every four or six hours.

† 4. Take Mixture of Ammonia, five ounces.
Oxymel of Squill, three drachms.
Wine of Tartarized Antimony,
forty drops.

Distilled Vinegar, half an ounce.

Of this mixture, let two table-spoonsful be
taken occasionally, or when either the cough
or shortness of breath is troublesome.

be avoided, as being injurious. A decoction of madder-root has in some cases been used as an attenuant and expectorant with a good effect.

In most cases of asthma, dyspepsia is a prominent symptom, and the patient is much troubled with flatulency of the stomach, acidities, and other symptoms of indigestion. To remove these, it will be necessary to make use of absorbents with stomachics and bitter infusions, as recommended under the head of Dyspepsia. Dr. Bree observes, that chalk and opium will astonish the asthmatic, by the excellence of their effects, when the irritation proceeds from dyspepsia of the first passages only. Vinegar separately exhibited was likewise found by him to counteract the flatulence and distension of the stomach.

Diaphoretics, such as tartarized antimony, &c., are a class of medicines which may prove useful in that species of asthma which is dependent upon pulmonic irritation of aerial acrimony, by promoting exhalation from the vessels of the lungs. Small doses of opium may be conjoined with a good effect, as in the pulv. ipecac. c. and the patient should not be subjected to the influence of irritating causes, such as are known to exist in towns and manufactories. Warm pediluvia may likewise be ordered.

The digitalis is a medicine which has frequently been administered in asthma. In the fourth volume of the Medical and Physical Journal, page 329, mention is made of a case by Dr. Sugrue, of Cork, in which its salutary effects were speedily and decisively produced. The tincture (as advised to be prepared by Dr. Darwin) was the preparation had recourse to, and this was administered in doses of fifteen drops, repeated twice a day. We are informed, that when his patient applied for advice, he was pale and emaciated; complained much of a sense of suffocation and tightness about the chest; he scarcely slept; but after dosing about an hour on going to bed, he awoke very much oppressed, was obliged to sit up in the bed during the remainder of the night, and very often believed that he could not live until morning. His pulse was about 120, and very feeble.

Dr. Sugrue states, that he put him under a course of the digitalis, as just mentioned. As he lived in a remote part of the city, he did

Vel,

5. R Misturæ Ammoniac. f. ʒi.
Liquor. Ammon. Acetat. f. ʒij.

Vini Antimon. Tartarizat. ℥ x.

Syrup. Tolutan. f. ʒi. M.
ft. Haustus, sextis horis adhibendus.

Vel,

6. R Pilul. Scillæ Comp. gr. x. fiant pilulæ
duæ, sextis horis capiendæ.

Or,

5. Take Mixture of Ammoniac, one ounce.
Solution of Acetate of Ammonia,
two drachms.

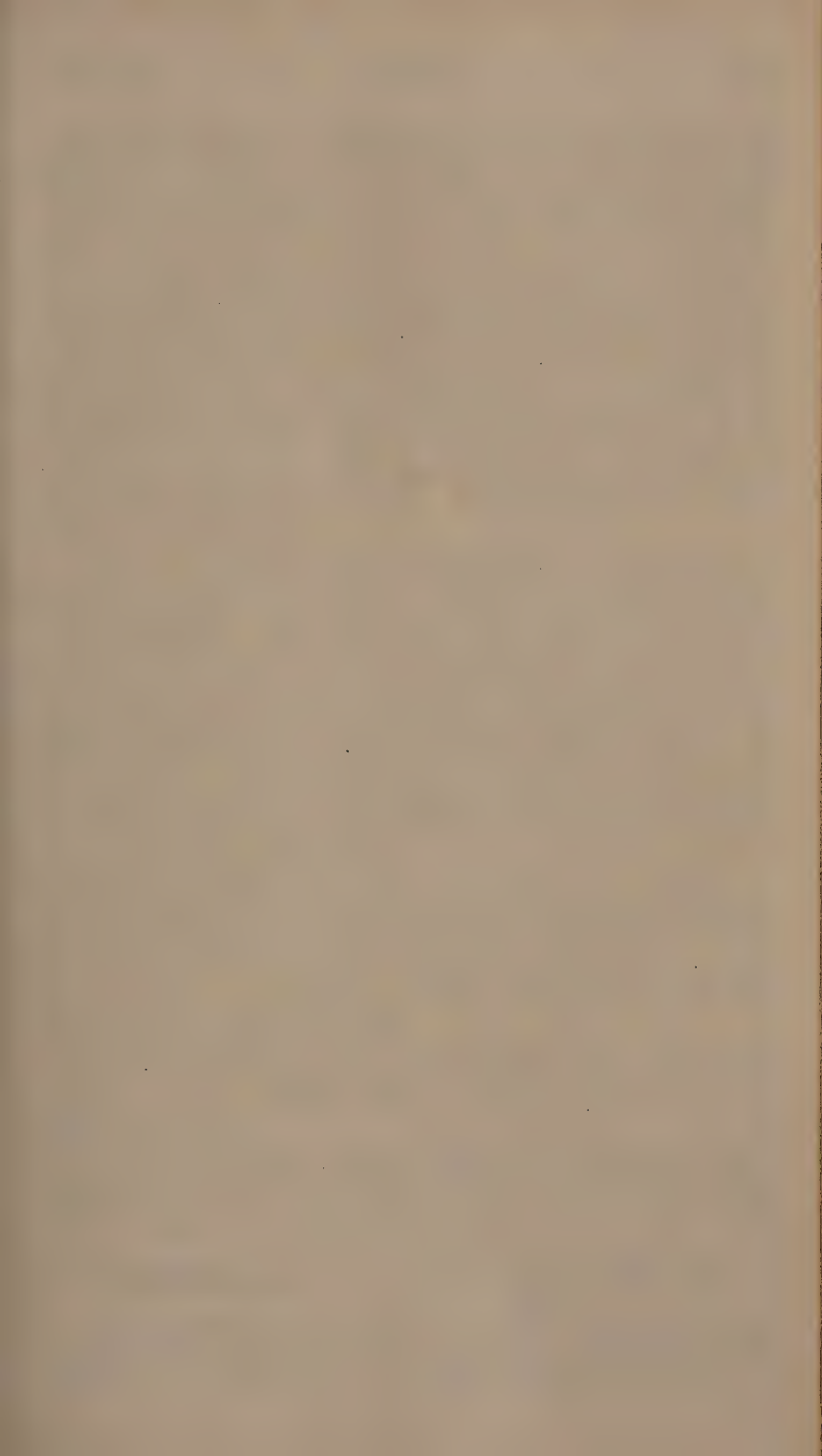
Wine of Tartarized Antimony,
fifteen drops.

Syrup of Tolu, one drachm.

Mix them, and take the draught every six
hours.

Or,

6. Take Compound Squill Pills, two, con-
sisting of five grains each.



not see him again for a fortnight; at the end of which time he again called upon him. The remarkable change which had taken place in his appearance was astonishing; he had got rid of the wheezing and oppression at his chest; his countenance was much fuller, and his complexion much less pale; his pulse was about 90, and tolerably strong. It appears from the account the patient gave of himself, that after he had taken the medicine about three days, he no longer felt himself obliged to sit up at night, but was able to take a comfortable nap, after which he felt himself refreshed; a sensation with which he had been for some months unacquainted. At the expiration of a week he could sleep five or six hours, and his appetite and strength improved in the same proportion: he no longer experienced the necessity of stopping to take breath on ascending an eminence. From continuing the medicine, he was, at the time of making this report, in better health than he had been for ten years before.

We are further informed by Dr. Sugrue, that in every other case of asthma in which the digitalis was exhibited by him, the most violent symptoms were mitigated, and the general state of health visibly improved. One effect which took place in every patient, and which particularly attracted his attention, was, that the expectoration was diminished, and at the same time the necessity of it seemed to be removed, which shewed how different its action was from that of antimonials. Another striking difference between its action and that of antimonials was, that it appeared less efficacious in relieving the symptoms of asthma in those cases in which it produced nausea or vertigo. The digitalis in conjunction with opium, by suspending the symptoms, has been found highly serviceable in some cases of spasmodic asthma.

It does not admit of the smallest doubt but that a combination of digitalis with opium has proved highly advantageous in spasmodic asthma, when given in the dose of half a grain of each every four or five hours. I have tried it, and found it to answer in two or three cases. In the pituitous asthma, squill combined with foxglove* might be more advisable.

Spasmodic asthma, as also dry convulsive cough, and chronic catarrh, are much relieved by a use of Prussic acid, which, under a failure of other remedies may be given, as advised under the head of Phthisis.

In asthma arthriticum there are usually intermissions and other irregularities of the pulse, great anxiety of countenance, with a blueish tinge thereon. Large doses of opium, æther, camphor, and

* 7. R Pulv. Digitalis, gr. vj.
Pilul. Scillæ Compos. ʒij.

Syrup. Tolutan. q. s. M.
ft. Massa, in pilulas xij. distribuenda, quarum
unam capiat ter quaterve in die.

* 7. Take Powder of Foxglove, six grains.
Compound Squill Pill, two
scruples.

Syrup of Tolu, a sufficiency to
form a mass, to be distributed into twelve
pills, of which let the patient take one
three or four times daily.

ammonia, are the medicines most likely to afford relief. Sometimes we may be forced to bleed the patient, and often to apply a blister to the chest. To assist these means we may add very warm pediluvia and the inhalation of the vapour arising from hot water.

Besides the means which have been recommended to be employed during a fit of asthma, it may be necessary to mention, that recourse has been had to the assistance of pneumatic medicine; and that the gases, or factitious airs, have been much used by a few physicians, but more particularly by the late Dr. Beddoes and Dr. Thornton. By the former of these gentlemen we are told, that such is the miraculous effect of oxygen vital or dephlogisticated air, when applied in asthma, that no sooner does it touch the lungs, than the livid colour of the countenance disappears, laborious respiration ceases, and the functions of all the thoracic organs go on easily and pleasantly again.

Of pneumatic remedies, Dr. Bree speaks with little confidence as to their efficacy in curing asthma. He however proposes oxygen as an auxiliary with other means of relief in that species arising from mucous irritation. In the dry asthma, oxygen was observed by him to be manifestly hurtful, and hydrogen and hydrocarbonate were tried without benefit.

We are told by a modern writer*, that he experienced no other means employed at the Worcester Infirmary to have been so efficacious in relieving habitual asthma as galvanism. In common cases it was used once a day: in those of a more severe nature, where the dyspnœa is great, it may be employed morning and evening.

Such are the remedies to be employed during a paroxysm of asthma; but in the intermissions we should have recourse to tonics, such as the cinchona bark, bitter infusions, chalybeate waters, and preparations of iron, particularly the ferri subcarbonas, and ferri sulphas, various formulæ of which will be found under the head of Dyspepsia. To assist the effects of these remedies, cold bathing may be used during the intermissions; and where this cannot be obtained, washing the breast frequently with cold water may probably be of some service. In addition to other tonics, exercise either in swinging, sailing, riding in a carriage, or on horseback, but particularly the latter, together with a change of air, will be beneficial to asthmatics: they should try different situations until by perseverance one is found out to live in, in which the disease is rendered less distressing, or is entirely removed. Their clothing should be warm, and flannel be worn next to the skin.

Whatever preparation of iron we may employ, it should always be given in small doses at first, increasing the quantity by degrees. If heat or any other unpleasant symptom is occasioned by it, its

* See Experimental Inquiry into the Laws of the Vital Functions, &c. by A. P. Wilson Philip, M. D. p. 329.

There are two cases in the *Revue Medicale* of constant asthma mentioned one of 10 y^{rs} and the other 3 years duration, repeated paroxysms and of long continuance, danger of suffocation, convulsive cough, distressing rattle, great prostration of strength marasmus; where the antiphlogistic, antispasmodics, anodynes &c were all tried without effect. But were both cured by means of gallic-acid in eight or ten times trial.

use must be suspended for a time, and saline draughts with opium be substituted. A want of firmness in continuing the use of tonics, when properly indicated, is however a great source of their discredit. In case of some temporary inconvenience being experienced from employing any particular medicine, or form, the practitioner should change it for another, never abandoning the general intention of strengthening the system, and thereby preventing a return of the disease.

As in many cases of asthma, and perhaps in the great majority of them, some effusion of serum into the lungs takes place, and the disease being long protracted, particularly at an advanced age, is very apt to terminate in hydrothorax, it would appear that digitalis combined with the other remedies which have been mentioned, during the intervals of the paroxysms, will be a very judicious mode of treatment. Indeed, its diuretic powers on such occasions have in many cases produced a happy effect.

During the intervals of asthmatic paroxysms, the bowels are to be kept open and regular by gentle aperients, such as rhubarb, magnesia, and manna, and all exciting causes are carefully to be avoided. The flatulency accompanying asthma is to be relieved by alkalies and absorbents, various formulæ of which are inserted under the head of Dyspepsia. Sometimes a small portion of diluted acetic acid will remove flatulency.

Emetics, by their determining the blood from the lungs to the surface of the body, and their supposed power of assisting expectoration, have been thought highly useful in all species of asthma, except that which depends on habit. A vomit given in the evening, when a fit has been expected to come on in the night, has in some instances appeared to prevent its attack. It therefore seems an advisable practice to make use of gentle emetics during the intervals of the paroxysms, and to repeat them from time to time. Ipecacuanha being milder and more certain in its operation than any of the preparations of antimony, should have a preference given to it.

In the intervals of the attacks, it will be highly necessary for the patient to avoid the various exciting causes; to keep the digestive functions in a proper state; to guard against atmospherical vicissitudes, and to keep up a regular and uniform excretion from the pores of the skin by flannel: lastly, to maintain as even a state of mind as possible, remembering that asthma is more alarming than dangerous, and that it rarely proves fatal, unless when complicated with, or in inveterate cases terminating in, some organic disease of a vital organ.

A dry and settled atmosphere is most friendly to asthmatical people, not only because it is free from impure vapours, but also as having more elasticity to press upon the vesicles of the lungs. While some asthmatical persons cannot live, however, with any comfort in the atmosphere of large cities, there are others again who feel themselves better in an air replete with gross effluvia, and

breathe with greater ease in a crowded room where there are several candles and a fire. Indeed the removal from a cold to a warm climate is sometimes found beneficial.

In every species of asthma the patient's diet should consist of such things as are light and easy of digestion, carefully avoiding at the same time whatever may tend to generate flatulency: and as many kinds of vegetables are apt to be attended with this effect, they are almost all improper. Animal food of the lightest kind, taken in a moderate quantity, so as not to overload the stomach, will be the most proper for asthmatics; and for ordinary drink they may use toast and water, or other cool watery liquors. All vinous, spirituous, and fermented liquors, will be injurious to them. Tea will likewise be improper, from its being usually drank warm, and from its supposed power of weakening the nerves of the stomach. Coffee has been employed in asthma with much advantage when taken in a powerful dose. In the pure spasmodic kind, if made so strong as an ounce to the cup, without milk or sugar, and repeated, if necessary, at the distance of a quarter or half an hour, the fit has been entirely removed; and this practice has been continued by patients labouring under the disease for years, affording certain relief to their paroxysms. Some practitioners have, however, disapproved of the use of coffee.

Garlic is a vegetable production which is found of service to asthmatical people. Acids usually agree with them.

HYDROPHOBIA, RABIES, OR CANINE MADNESS.

THE commencement of hydrophobia is marked by unusual anxiety, timidity, and sighing, severe pain in the epigastric region, difficult and painful deglutition of all liquids, accompanied by a sense of suffocation, dryness of the tongue and fauces, a small weak pulse, and slight pyrexia: its progress and close, by continual watching, laborious respiration, intolerance of light and the motion of air, a discharge of viscid saliva from the mouth, and not unfrequently by convulsions.

The disease arises from the introduction of a small portion of the poison by the bite of a rabid animal, and that commonly of the canine or cat kind, as being those which are most domesticated. Some of the old writers have asserted, that it has occurred from the contact of the saliva with the skin, without the intervention of the poison of a rabid animal, and independently of any bite, or the infliction of any apparent injury: but the possibility of this I much doubt. At any rate, the occurrence is to be considered as very rare indeed.

There can be no doubt, however, but that symptoms exactly resembling those of the genuine rabies canina have arisen in the human body from other causes. Local irritation from wounds in irritable habits, especially when conjoined with a perturbed state

of the passions, and also violent affections of the mind, independently of corporeal injury in hysterical and hypochondriacal constitutions, have at times produced all the pathognomic symptoms of canine madness. Violent alternations of heat and cold, and all other causes which induce great debility, and at the same time increase the irritability of the system, have also at times proved adequate to the production of symptoms exactly corresponding with those of rabies. Such cases have been denominated by medical writers, spontaneous hydrophobia.

A few have gone so far as to doubt the existence of this affection, as arising from the bite of a rabid animal and an absorption of the virus, contending that all the phenomena witnessed in this terrific malady may be referred to nervous irritation, from terror and apprehension of its occurrence, and are wholly independent of the saliva, *erroneously*, they think, considered poisonous: but the fallacy of this hypothesis has been most satisfactorily ascertained.

Many have doubted whether madness can arise in animals without preceding contagion. Some cases recorded by M. Rossi in the *Mem. de l'Académie de Turin*, tom. 6ième, evidently demonstrate, however, that animals previously healthy become capable, when enraged or irritated to a high degree, of communicating disease by their bite; a circumstance which, although long credited by the vulgar, wanted the support of direct evidence to establish it satisfactorily.

The fact of rabies sometimes arising spontaneously appears to be decidedly established by Mr. James Gillman*: for he records an instance where a dog that was chained in a yard, without any kind of intercourse with animals capable of inoculating the disease upon him, had it in its genuine form, which was verified by the effect produced by his saliva.

Food of a highly putrid nature, a deficiency of water to assuage thirst, severe exercise during very sultry and dry weather, and a certain state or peculiarity in the atmosphere similar to what produces epidemics of other kinds in the brute species, may possibly be capable of giving rise to madness in the canine and cat species, as well as a long continued worrying of the animal. Some physicians, however, are disposed to dispute the efficiency of these remote causes; and maintain the actual infection from a diseased animal, by an inoculation of the poison, to be the sole exciting cause. There are, however, strong presumptive proofs that rabies does originate spontaneously in some quadrupeds; and carnivorous animals seem most, if not alone, liable to it as a spontaneous disease.

It does not appear, however, that madness is so prevalent among dogs in warm climates as in cold ones; for during a resi-

* See his Dissertation on the Bite of a Rabid Animal.

dence of many years in the West Indies I never met with a single occurrence of the kind.

We are also informed by various writers, that canine madness is a stranger to South America; and according to the testimony of Volney* it is equally unknown in Egypt and Syria. Mr. Barrow† also tells us, that notwithstanding the heat of the climate at the Cape of Good Hope, and though the dogs are fed in the interior by the Caffres on meat in a highly putrid state, still the disease is unknown there. It is likewise mentioned by a missionary, that canine madness is a malady unknown in Paraguay, a country where beasts of every description are frequently destroyed both with the burning heat of the atmosphere and long thirst for want of water: which last is not to be obtained for many leagues in some places.

Rabies seem to arise from a specific contagion, which being once produced by causes unknown, continues to be propagated by the intercourse which dogs have with one another. It is alleged that the distemper is not communicable from one hydrophobous person to another, by means of a bite or any other way; but this seems to require further confirmation.

The possibility of reproducing this disease by inoculation of the quadruped with virus secreted in the human system, had long remained a doubtful fact, having often been tried without success; but this point seems now determined by Messrs. Magendie and Bresslet‡ having succeeded in affecting a dog with rabies, by inoculating him with the saliva of a man under that disease.

We have no proof that any of the secretions of a rabid animal but the saliva can excite hydrophobia. It is known to a certainty, that the specific poison of rabies exists in the saliva, but it has been a question how far the fluids and solids have been generally contaminated. The experiments of Mr. Gillman have furnished results which go far to prove that the infecting material of rabies is hardly to be found but in the saliva.

A large portion of such persons as have really been wounded by the bite of a rabid animal are never affected with the disease. Mr. Hunter mentions an instance of twenty persons being bitten by the same dog, and only one was seized with it. It is therefore obvious, that different persons are not alike predisposed to be acted upon by the same contagion, and likewise that the predisposition to receive contagion varies in the same person at different periods. The depressing passions, as well as other causes producing debility, probably may predispose the system to the action of this virus.

In the canine and cat species, about seven or eight days may be considered as a fair average of the shortest period in which rabies

* See his Travels, vol. i.

† ————— into the Interior of Africa and the Cape of Good Hope.

‡ See London Medical Repository, vol. iv. p. 35.



shews itself after the animal is bitten, and six or seven weeks the longest period from the date of the bite. In the human species, only a few days have in some instances elapsed previous to the symptoms shewing themselves; but the most common time of their appearance is from twenty to forty days after the bite. There are no well-authenticated instances of the poison lying dormant longer than eleven or twelve months; and we may therefore consider a person pretty safe at the expiration of a year without any symptom appearing.

In the cases quoted by authors where canine madness is said to have occurred at the distance of many years from the communication of the supposed poison, we may justly consider them either as instances of spontaneous hydrophobia, as before mentioned, or as such other diseases as occasionally exhibit the anomalous symptoms of an inability to swallow fluids, and an aversion to the sight of them: the poison of a rabid animal has had no share in their production. The frequent occurrence of an aversion to fluids, and of great difficulty in swallowing them in women affected with hysteria, have been noticed by many writers, and some of these facts demonstrate that all the symptoms of canine madness have been brought on by violent affections of the mind in irritable and delicate habits. The fatal termination of some of these instances, tends further to confirm the strictness of analogy between rabies and hysteria. Possibly some cases also of tetanus, in which there has been much local irritation in an excitable habit, conjoined with a perturbed state of the passions, may have been mistaken for hydrophobia, by exhibiting symptoms exactly corresponding with those of rabies canina.

Rabies in a dog is attended with the following appearances:—he generally shews some marked deviation from his accustomed habits. In those which are domesticated, as lap-dogs, some strange peculiarities have been observed, as the picking up of the different little objects, such as paper, thread, straw, &c., or any thing which may happen to be presented to their notice. Sometimes they shew a depraved appetite, and eat their own excrement, or lap their own urine. Still, however, in this stage they seldom attack any person unless irritated to it. Although a diseased dog often observes the usual obedience to his master, and evinces the same attachment, still he is usually extremely irritable, and always treacherous, suffering any one to fondle him, but suddenly snaps or bites with the smallest provocation. In the progress of the disease, his eyes sometimes become inflamed, a purulent discharge issues from the lids. Instead of barking, he often makes a dismal howl, and has usually a listless and melancholy appearance.

The term hydrophobia, as applied to dogs, is highly exceptionable, as the animal, instead of shewing any dread of water, which has generally and popularly been considered as marking the disease, seeks it in most instances with avidity, and laps it incessantly.

A late writer* on the diseases of dogs very justly notices the evil that this opinion has led to in lulling into dangerous security persons bitten by dogs actually rabid, and in particular refers to an instance in which an eminent physician, on being consulted by a person who had been bitten, recommended that no precautions might be taken, because he was informed the dog could drink. Another absurd popular error noticed by this writer, is the opinion that the worming a dog, which is merely removing the frænum from the tongue, will prevent his becoming rabid at any future time.

As rabies advances, the animal becomes extremely anxious and impatient, and has an inordinate desire to gnaw every thing around him. When chained or confined, he uses his utmost endeavours to break loose, and if he succeeds, he wanders about seeking other animals to bite, particularly some of his own species. It has before been observed, that frequently he does not avoid water, but laps it greedily; still in this stage of the disease he is often deprived of the power of swallowing it. Very often he has the appearance of being paralytic behind, and labours under an inflammation in his bowels, which occasions him to sit on his rump, seemingly in great pain. In the last stage, all the preceding symptoms are highly aggravated: he now becomes very feeble, his jaws drop as if paralyzed, and the saliva runs from his mouth; he wanders or rather staggers about with scarcely the power of biting, and at length being exhausted by disease, generally dies on the fourth or fifth day from its commencement. Few dogs survive the seventh.

In the human species, the general symptoms attendant upon the bite of a mad dog, or other rabid animal, are:—

The part bitten, after some time begins to be painful; then come on wandering pains, with an uneasiness and heaviness, disturbed sleep and frightful dreams, accompanied with great restlessness, sudden startings and spasms, sighing, anxiety, and a love of solitude. These symptoms continuing to increase daily, the cicatrix of the wound becomes hard and elevated, a peculiar tingling sensation is felt in the part, and pains begin to shoot from the place which was wounded, all along up to the throat, with a straitness and sensation of choking, and a horror and dread at the sight of water and other liquids, together with tremors. The person is, however, capable of swallowing any solid substance with tolerable ease; but the moment that any thing in a fluid form is brought in contact with his lips, it occasions him to start back with much dread and horror, although he labours, perhaps, under great thirst at the time.

This appears to be a circumstance peculiar to the human race; for rabid animals do not evince any dread at water. It has indeed been remarked by a late writer†, (and very justly in my opinion)

* See Canine Pathology, by Mr. Delabere Blaine, Professor of Animal Medicine.

† See Dr. Marshall's Anatomy of the Brain, p. 80.

that the dread expressed, is not of the water, but of the act of deglutition. It may, however, be said, that the very sight of water produces this dread; but in that case the sight of the water associates with it the idea of deglutition.

Many other practitioners are also of opinion that this peculiar symptom or starting back with horror at the sight of water and other fluids, does not proceed from any dread of them, but from the fear of swallowing them, owing to the diseased state of the parts in consequence of inflammation. To swallow liquids, a greater contraction of the muscles of deglutition is requisite than to get down solids, and of course it produces a higher degree of pain and spasm, which explains the greater capability in the patient of being able to swallow solid substances than fluids.

Dr. Vaughan denies, however, that the excruciating pain, which never fails to attend every attempt to drink, is felt in the fauces and throat. He says, that it is the *scrobiculus cordis* which is principally affected, this being the part to which the patient always applies his hand. From this circumstance, therefore, from the presence of *risus sardonius*, from the muscles of the abdomen being forcibly contracted, and from the sense of suffocation which seems to threaten almost immediate death, he is led to think, that in hydrophobia a new sympathy is established between the fauces, the diaphragm, and the abdominal muscles.

Dr. Rush, from some appearances which he observed on dissecting a boy who died of hydrophobia, from the bite of a mad dog, has been induced to suppose that it is the temporary closure of the glottis which produces the dread of swallowing liquids; hence the reason why they are taken in suddenly and at intervals. The same danger and difficulty attend swallowing the saliva; and hence, he thinks, the symptom of spitting proceeds, which has been so often noticed in hydrophobia. In the case here alluded to, the morbid appearances were as follow: the epiglottis was inflamed, and the glottis so thickened and contracted, as barely to admit of a probe of the common size. The trachea below it was likewise inflamed and thickened, and contained a quantity of mucus in it. The *œsophagus* exhibited no marks of the disease, but the stomach had several inflamed spots upon it.

Dr. Parry is of opinion*, that the part which is primarily affected, so as to give rise to the symptom denominated hydrophobia, is not the pharynx, *œsophagus*, or stomach, but the upper portion of the trachea, together with other parts of the apparatus concerned in the function of respiration.

In the course of the disease a vomiting of bilious matter comes on, and an intense high fever ensues, attended with continual watching, great thirst, dryness and roughness of the tongue, hoarseness of the voice, and the discharge of a viscid saliva from

* See his Cases of Rabies Contagiosa and Tetanus.

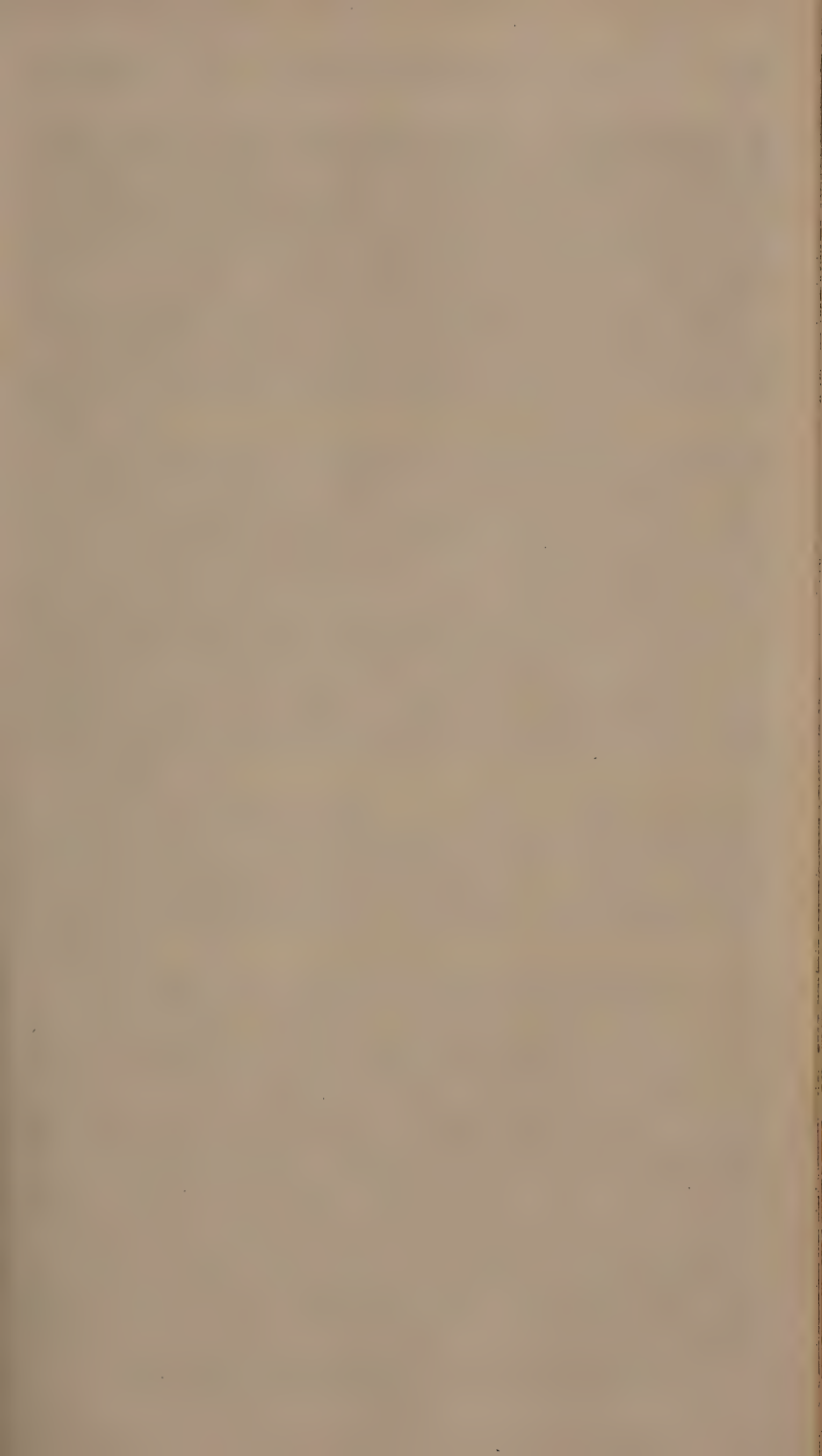
the mouth, which the patient is constantly spitting out; together with spasms of the genital and urinary organs, in consequence of which the evacuations are sometimes forcibly ejected. In general he is incapable of enduring light, or the motion of air; his respiration is laborious and uneasy, but his judgment is unaffected, and as long as he retains the power of speech his answers are distinct. In some few instances a severe delirium arises, and closes the tragic scene; but it more frequently happens, that the pulse becomes tremulous and irregular, that convulsions arise, and that nature, being at length exhausted, sinks under the pressure of misery.

Our prognostic in this disease must always be unfavourable, as in most instances all means whatever have proved ineffectual. Death commonly takes place about the third or fourth day from the first appearance of the symptoms.

The appearances to be observed in the human species on dissection in hydrophobia are, unusual aridity of the viscera and other parts; marks of inflammation in the lower portion of the œsophagus and cardiac extremity of the stomach, and even in the stomach itself. Some marks of inflammation are likewise to be observed in the brain, consisting in a serous effusion on its surface, or in a redness of the pia mater; which appearances have also presented themselves in the dog. Now and then we meet with an accumulation or effusion of blood in the lungs. In some cases of dissection, not the least morbid appearance has been observed either in the fauces, diaphragm, stomach, or intestines. The poison has therefore been conceived by some physicians to act upon the nervous system, and to be so wholly confined to it, as to make it a matter of doubt whether the qualities of the blood are altered by it or not, or whether the poison at all enters the system by the absorbents. As far as my knowledge extends, the lymphatic glands in the course of absorption have never been found diseased. On the development of the symptoms of hydrophobia, the pain beginning in the bitten part appears indeed to follow rather the course of the nerves than that of the absorbents.

On opening rabid animals, slight marks of inflammation about the epiglottis and pylorus, with occasionally some livid marks in the villous coat of the stomach, are now and then to be observed, but sometimes no appearances of inflammation either in the stomach or elsewhere are to be observed, on inspecting the bodies of these animals.

As in rabies, when once manifested in the system, the power of medicine and all human skill have failed in most instances, our views should be early directed to prevent the accession of the disease; and for this purpose the most effectual is excision of the wounded part, with free ablution and scarifications. Immediately, therefore, on the infliction of the bite, or as soon afterwards as possible, ablution with water and soap should be had recourse to, and be continued until professional aid is procured. On the arrival



of the surgeon, a free and complete excision of the bitten part is to be made, taking care to carry the knife to a sufficient depth, so as to insure its complete removal. The excised part being removed, ought carefully to be examined to see if there is any place in the piece through which the dog's teeth appear to have passed; and in case there is, the excision ought to be carried still deeper than before. Should the knife, on a close examination, appear to have entered the wound made by the dog's teeth, it may be advisable to recommence the operation with a clean knife, lest the other should be contaminated by its having entered the wounded parts, and by which the sound ones might become inoculated with the canine virus.

The sooner that the wounded part is extirpated after the accident the better; but it will be right to do it even at the distance of several days, rather than that the person should be debarred of the chance which excision affords; as there is great reason to presume that the canine poison does not enter the system so quickly as a variety of others are perceived to do*. This conclusion we are somewhat authorized to draw, as in several well-attested cases, many weeks, nay months, have intervened between the accident of being bitten, and the appearance of the disease. If the bite be of long standing, and the wound consequently cicatrized, and there be a certainty that the animal by which it was inflicted was really rabid, it should immediately be laid open, cauterized, and caused to suppurate.

Dr. Darwin observes†, that if the patient is bitten in a part which could be totally cut away, as a finger, even after the hydrophobia appears, it is probable it might cure it, as he suspects the cause still remains in the wounded tendon, and not in a diffused infection tainting the blood. Hence there are generally uneasy sensations in the old cicatrix before the hydrophobic symptoms commence.

Even in cases where assistance has not been requested until the consequent disease has already appeared, I am of opinion that the wounded parts should be excised: for if the excision of the part, in which the virus of small pox, syphilis, or any similar disease is deposited, after the local action has evidently commenced, prevents absorption, and consequently the complete formation of the general disease; what reason is there for supposing that the same effect would not result from this operation, at the same period, in the case of the bite of a rabid animal, if the poison enters the system by the absorbents?

After excision, ablution is again to be performed with a solution of volatile alkali in water, and when the flow of blood begins to cease, suction with the cupping-glass may be resorted to. The alternate employment of ablution and the exhausted receiver may

* See Mr. Gillman's Prize Dissertation on the Bite of a Rabid Animal.

† See *Zoonomia*, vol. iv. p. 50.

be continued for some hours. Having proceeded thus far, caustic, such as the argenti nitras, or potassa fusa, may be applied to the wound, so as to produce a slough in the first instance, and afterwards a purulent discharge for some weeks. By this mode of treatment many persons have been known to escape the disease; while others who have been bitten by the same animal, and who neglected these means, have become affected.

It sometimes happens that the wounded or bitten part is so situated as not to admit of excision, or from the timidity of the patient he cannot be persuaded to submit to the operation. Under this dilemma we must be content to have recourse to a careful and persevering ablution, and afterwards to scarification and cupping, bathing the parts with warm water to promote a free flow of blood, and assist in washing away any remaining particle of the poison. With respect to the fluid to be employed at first in the ablution, a weak solution of volatile alkali, in the proportion of one part of the alkali to four of water, may be as proper as any we can use. With this solution, which is fully capable of dissolving the saliva, the wounded part should be freely washed, and injections of the same with a syringe forcibly be made into the wound. After this, water may be substituted to assist in washing away any remaining particles of the canine poison. Having washed the wound for a considerable time, it may be touched with caustic, the argenti nitras, or the potassa fusa. Ligatures above and below the wounded part have been recommended during the ablutions by Dr. Percival, when they can be put on.

The bitten part must be destroyed to the bottom, by repeated applications of the caustic. To assuage the inflammation caused thereby, the wound is to be dressed for some time with poultices; and afterwards with acrid dressings and hot digestives, to remove the eschar, create a discharge, and drain the injured parts. Where there has been any delay after the accident, the wound should thus be kept open for two or three weeks, or even longer.

From some experiments made by Dr. Linke, of Jena, with the saliva taken from a mad dog after it was dead, and that had bitten other animals with a fatal effect, the external application of a strong solution of white arsenic in water to wounds besmeared with the poison, appears to have been attended with the happy effect of destroying the virus, and of preventing the disease from taking place. The remedy seems therefore worthy of further trials in wounds made by rabid animals.

Under the head of Animal Poisons it is mentioned that the external application, as well as the internal exhibition of the liquor ammoniæ, was found on many trials entirely to do away the injurious consequences arising from the bite of the cobra de capello, a snake of the most venomous kind, and productive of symptoms pretty similar to those arising from a rabid animal.

The same remedy would, therefore, seem worthy of a trial in cases of hydrophobia; but as there would be great difficulty in administering caustic volatile alkali in a state necessarily diluted with some mild bland liquor, where the increased sensibility of the fauces and the dread of liquids are so strongly felt, we might convey it into the stomach by Mr. Jukes's instrument (see Vegetable Poisons), or in the manner practised by Mr. John Hunter, and hereinafter mentioned, or we might mix the volatile alkali with crumbs of bread, and form the mass into pills, or a bolus.

In addition to these modes of prevention, it has strongly been recommended to commence, very speedily, a course of mercurial unction, which is to be continued regularly, and to be applied in a considerable quantity at once, so as to occasion some degree of salivation; to expedite which, the submuriate of mercury may be given internally night and morning, and warm bathing be used occasionally. Mercurial fumigations may also assist.

With the design of exciting a rapid salivation in hydrophobia, Dr. Darwin has suggested that one grain and a half of the hydrargyri oxymurias dissolved in half an ounce of rectified spirit may be given frequently to the patient with a prospect of advantage. From a paper by Mr. Addington, of West Bromwich, inserted in the Contributions of Medical Knowledge published by Dr. Beddoes, it appears that a similar mode is adopted by him for the cure of gonorrhœa virulenta, and that he has cured hundreds in a very short time in this manner, without the least disagreeable consequence. He directs us to proceed as follows: three grains of hydrargyri oxymurias are to be dissolved in one ounce of rectified spirit. Half of this mixture is to be taken undiluted at going to bed; it produces a copious salivation for an hour and a half, or longer, during which the patient spits about a quart. Some aperient salts are to be taken on the second day after this operation, and on the evening of that day he is to repeat the draught, and the salts on the day but one following.

Dr. Thomas Reid, in a pamphlet which bears the title of Observations on the Application of warm and cold Sea-bathing, recites a case which strongly attests the preventive effect of mercury. He makes mention, that a man, a woman, and several dogs, were bitten by a supposed mad dog, who was soon after destroyed. A fortnight after the accident, he saw them; the woman was slightly wounded in the little finger, a black scab remained on the puncture: she had great pain in the arm, shooting up to her head, particularly in the night, with disturbed and frightful dreams, and great depression of spirits. The man had been bitten in the hand also, but had not so much pain. He directed mercury for them in the manner published by Dr. James. In a few days the symptoms abated; and as the woman's mouth was sore, she desisted from using it. The pain, however, returned very soon, greatly augmented, and affected her head; she re-

sumed the medicine, and every symptom vanished; they both remained perfectly well. Had any return of the disease taken place, he is certain he should have been informed of it.

Dr. Reid further mentions, that the same medicine was given to dogs; but by some accident one of them was forgotten, and took none; he became raving mad the thirtieth day, and in that state he had him shot; all the other dogs remained well, except a small lap-dog, which died of the salivation. Neither the man nor woman supposed the dog to have been mad, until they began to take the medicine; the mind had therefore no influence in producing the symptoms that ensued.

These facts seem well authenticated, and strongly attest the good effects of mercury, when used at an early period. During the actual presence of the disease, its inutility has been proved in numberless instances. Dr. Mosely* has, indeed, recorded a case of recent hydrophobia, and timely discovered, which was successfully treated by exciting a rapid and plentiful salivation by means of an ounce of strong mercurial ointment rubbed into different parts of the body at four frictions within forty-eight hours.

Dr. Richard Pearson, of Birmingham, in his Treatise on Hydrophobia, offers it as his opinion, that if the disease has ever been cured by mercury, it has been in consequence of a counter-impression communicated to the whole system, and not in consequence of the salivation; for a salivation is a constant symptom of the disease, so that if it were curable by a flow of spittle, it would cure itself. This seems, however, a vague mode of reasoning.

Although medicine has hitherto proved ineffectual in most of the cases where the disease had fully established itself, still it is necessary to mention the plan which has usually been pursued on such occasions.

From certain symptoms which attend on hydrophobia, such as heat, thirst, restlessness, fever, difficulty of breathing, priapism, watchfulness, and furor; from the inflammatory appearances usually observed on dissection, and from the successful employment of venesection in some supposed cases of rabies, this remedy has been much used by many practitioners.

Where the true characteristics of the disorder were really present, it had not heretofore afforded relief; but two successful cases have lately been reported in the 167th No. of Phillips's Medical Journal, by Dr. Shoolbred, of Calcutta, in which bleeding *ad deliquium animi*, and repeating the operation at intervals as long as firmness of arterial action or the symptoms of hydrophobia remained, completely removed the disease. In these instances, venesection was resorted to immediately on the disorder becoming apparent. The cure in these cases, although

* See his Dissertation on Canine Madness.

attributed by Dr. Shoolbred to blood-letting alone, has by some been supposed to be owing to the combined use of mercury at the same time.

The trials which have as yet been made of the depletory practice in Europe, are too limited and defective to admit of their being received as decisive of the question as to the utility of copious bleeding at the onset of rabies. The operation should be performed as soon as the wound reassumes an inflamed appearance, or an aversion from drinking is manifested: the orifice ought to be a large one, and the bleeding be continued till actual fainting is induced, for it is not the quantity of blood lost, but the suddenness with which it is abstracted, and the fainting, that determine its efficacy.

The inflammatory diathesis, which has been supposed to exist in this disease, has of late been disputed, and particularly by Dr. Pearson. He observes, that some of the symptoms are merely accidental, others scarcely perceptible, and some, even if present, would not denote the disease to be of a nature requiring venesection. Dr. Parry says, that with respect to the proximate constitutional character of rabies, there cannot be a greater mistake than to suppose either that the fever consequent on the disease is of the inflammatory kind, or that its peculiar symptom arises from local inflammation of the fauces, the cardia, or any other part.

Under the idea that rabies is an inflammatory disease, warm bathing, and the rest of the antiphlogistic plan, have been much used in its treatment; but these means proving ineffectual, and from a fancied analogy between tetanus and rabies, some practitioners have been induced to recommend cold bathing, with a free use of wine.

Dr. Russell makes mention that wine in large quantities has been administered with success against the bites of venomous serpents; between which disorder and rabies we can readily allow some degree of affinity. With respect to cold bathing, this has been found to aggravate the disease when it has once absolutely taken place, by exciting convulsions; but before it has shewn unequivocal symptoms, and is apparent, this remedy may probably be used with advantage. That cold bathing possesses a degree of preventive power against the effects of canine poison, is an opinion handed down by ancient writers, and is still entertained by many of the moderns.

From considering that the poison of a rabid animal produces an excessive increase, or morbid alteration of the natural sensibility, and that those who are bitten by a mad dog, or other animal so diseased, are in a perpetual state of restlessness, from the beginning of the attack to the end, that they can ill bear the impression of objects upon the senses, that the least noise is offensive, and that all feeling is painful, opium has been much employed; and considering that the poison produces these

effects, we might be induced to suppose that it would have proved a valuable and powerful remedy. Many cases are however on record, where, although it was given to the quantity of 180 grains in the space of fourteen or fifteen hours, it failed to produce any good effect*.

Whenever opium is administered, the dose ought to be pretty considerable, and its repetition should be regulated by the effect it occasions, without much attention to the quantity. Might not the external application of it, as advised under the head of Tetanus, be worthy of a trial? Where the patient loses the power of deglutition, introducing opium into the system by means of friction, appears to be a very eligible plan. Mr. Ward, of Manchester, was, I believe, the first who suggested its being employed in hydrophobia in this manner. Indeed, as the throat appears in this disease always to be affected with spasmodic contractions, it would seem that no remedy we can employ promises better effects than the rubbing in (and particularly about the throat and chest), opium in the form either of liniment or ointment†.

Dr. Stutz, of Suabia, very much recommends a trial of the vegetable alkali in this disease, alternately administered with opium, together with its external application in a warm bath.

Besides opium, other antispasmodics, such as musk, &c., have been employed in the treatment of hydrophobia, but without much advantage. The best plan will be to unite their powers, by giving them combined as below‡.

As ipecacuanha in small doses proves serviceable in some spasmodic diseases, it perhaps might be useful to give it in this. It should not, however, be administered so as to provoke vomiting, but only in such doses as will be sufficient to promote a copious perspiration, by exciting a slight degree of nausea. It is probable that the pulvis ipecacuanhæ compositus (in which there is a portion of opium) ought to be preferred to the simple powder, as being usually attended with a more certain diaphoretic effect.

It has been recommended to make a trial of the oil of turpen-

* See Medical Record and Researches, art. viii. p. 117.

† 1. R Tinct. Opii, f. ℥j.
Spirit. Camphoræ, f. ℥ss.
Liquor. Ammoniacæ, f. ℥ij. M.

ft. Linimentum.

Vel,

2. R Adipis Præparat. ℥i.
Opii in Pulv. subtilis. trit. ℥ij. M.

ft. Unguentum.

‡ 3. R Moschi, gr. xij.
Camphoræ, gr. v.
Opii, gr. iij.—x.
Bals. Peruv. q. s. M.

ft. Bolus, 4tis horis sumendus.

† 1. Take Tincture of Opium, one ounce.
Camphorated Spirit, half an ounce.
Solution of Ammonia, two drachms.

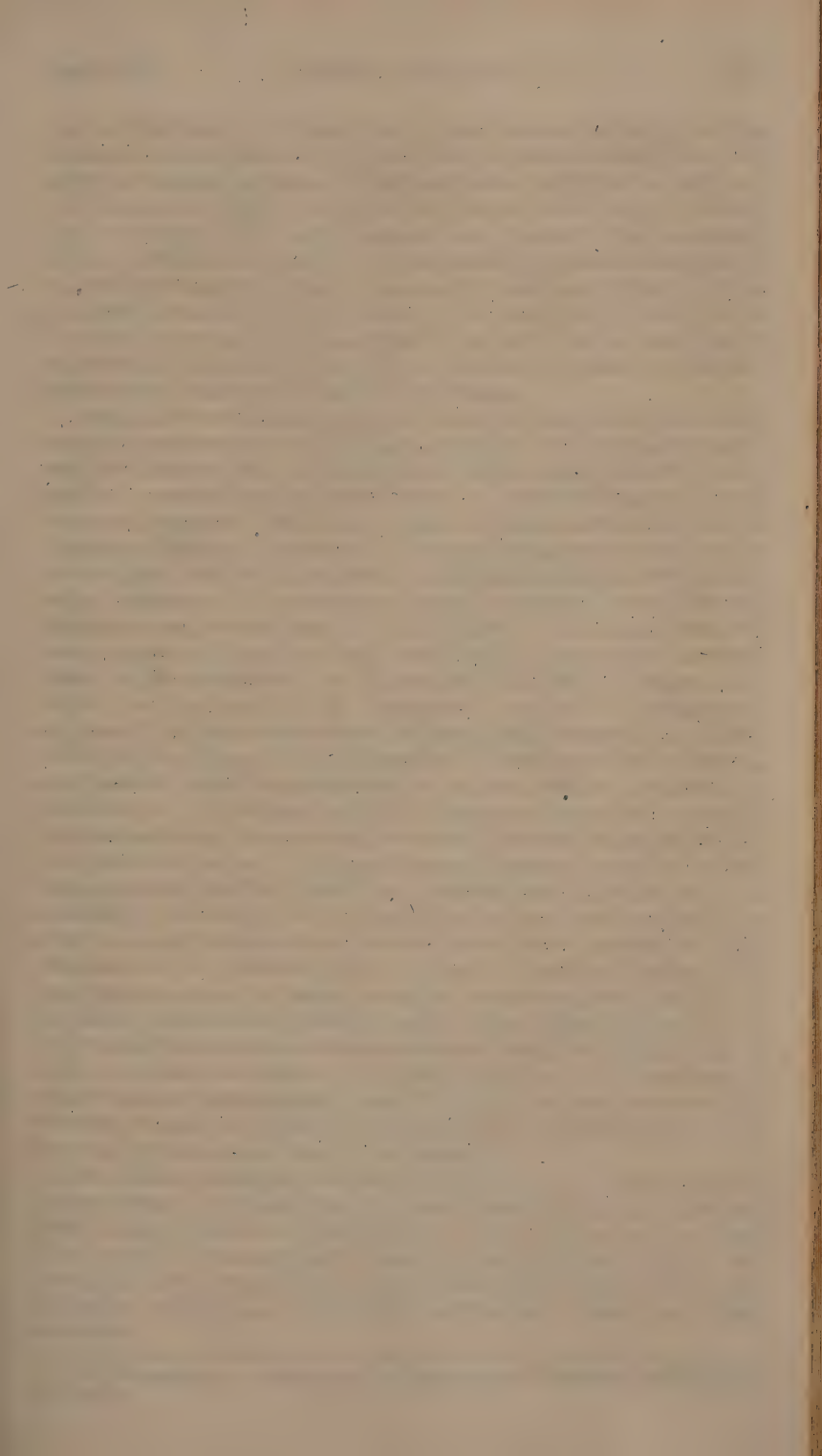
Mix them, and use them as an embrocation.

Or,

2. Take Prepared Lard, one ounce.
Opium, in fine powder, three drachms.

Mix them into an ointment.

‡ 3. Take Musk, twelve grains.
Camphor, five grains.
Opium, three grains to ten.
Balsam of Peru, a sufficiency to form a bolus, which may be taken every four hours.



tine in the form of clyster, during the convulsive stage of the disease, from its efficacy in some other spasmodic affections, but more particularly hysteria. The hint seems worthy of attention.

It is asserted that some cures have been performed by a liberal use of vinegar. We have likewise been assured, that anointing the body freely with sweet oil, and pouring repeated draughts of it forcibly down the throat, has lately been discovered to be a successful remedy in hydrophobia. The dread of fluids is said to diminish in proportion to the quantity of oil which is swallowed. A method of preventing the plague, somewhat similar to this, has been noticed under the head of that disease.

Among the medicines celebrated for their virtues in hydrophobia are to be enumerated the Ormskirk powder, the Tonquin remedy, and the Carnatic pill. The former of these seems perfectly inert, and on a careful analysis was found to consist of about half an ounce of prepared chalk, ten grains of alum, three drachms of Armenian bole, one drachm of powdered elecampane root, and a few drops of the oil of aniseeds. The principal ingredient in the latter is arsenic. This mineral is much employed by the Hindoo physicians as an antidote to hydrophobia. It enters into the composition of the East India snake-pill, a medicine communicated to the presidency of Madras by a native of Tanjore, and which, we are told by Dr. Simmons, (one of the Company's surgeons,) he has administered with apparent success to persons bitten by mad dogs. In Dr. Hamilton's Treatise on Hydrophobia, it is indeed much recommended to try the effects of arsenic in this disease. As strong epileptic paroxysms have been stopped by administering the arsenical solution, possibly it might have a good effect in rabies. A combination of arsenic and opium has been proposed by Dr. Blane*, as a prophylactic for the bite of a mad dog. The oxyd of zinc, and the cuprum ammoniatum, are other mineral preparations which have been named as well adapted to the disease. The Tonquin medicine consists of twenty-four grains of native cinnabar with the same quantity of factitious, made into a powder, with sixteen grains of musk. It is directed to be taken in a tea-cupful of arrack or brandy, and is said to secure the patient for thirty days, at the expiration of which it is to be repeated; but if he has any symptoms of the disease, it must be repeated in three hours. The first dose is to be taken as soon after the bite as possible.

The alisma plantago, reduced to powder, and given to the person bitten, is reported to be much used among the Russians with a happy effect in hydrophobia. It may be given in doses from twenty to twenty-four grains of the powdered root, at intervals of two hours, but it ought never to be relied on to the exclusion of the local treatment, nor indeed should any other medicine.

* See Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge.

Notwithstanding the various nostrums that have in all ages and different countries been extolled as antidotes to the poison of rabid animals, we may rest assured that the only remedy on which we can place a confidence is excision or cauterization, but particularly the former. Even in wounds completely healed, perhaps it would be advisable to adopt one or other of these, and thereby expose the part within reach of the animal's teeth. If the remedy is resorted to before lancinating pains and uneasiness begin to shew themselves about the cicatrix, we may be more likely to succeed by our preventive means, as such symptoms indicate the passage of the virus through the absorbents, or along the course of the nerves.

Dr. Pearson is of opinion, that the exciting some degree of fever and inflammation may have a salutary effect in canine madness. He observes, that there is no instance of a person having recovered from an animal poison introduced into the system, without more or less inflammatory action. The poison which produces the plague is often most fatal when it is accompanied with the least degree of fever; and swelling and inflammation of the bitten part, together with increased heat over the whole body, are the usual forerunners of recovery in cases of viper bites.

On these grounds he is induced to presume that wine, ardent spirits, and aromatics, may have a beneficial effect in rabies, provided the aversion to liquids is not so strong as to render the exhibition of wine impracticable. He says, that perhaps the nitric or other mineral acids, or vinegar (as mentioned by Dr. Ferriar), might be advantageously mixed with the wine. Besides giving wine and vinegar by the mouth, he tells us they should likewise be injected up the rectum. Those things are to be administered on the first appearance of the symptoms characteristic of rabies; for as the disease advances, neither wine nor any other liquid can be swallowed in quantities sufficient to produce a powerful effect; and there is sometimes an equal impediment to the administration of clysters.

Even in this state of things, he mentions, we are not without resource. Some of the concrete acids, such as the essential salt of tartar, the essential salt of lemons, or even the acidum benzoicum, may be given joined with about half as much powdered capsicum, or other strong aromatic, and divided into small portions, to be enveloped in wafer-paper, and formed into boluses. Not less than 20 or 30 grains of the concrete acids, nor less than 8 or 10 grains of the capsicum, should be given for a dose. Dr. Pearson further observes, that while these things are administered internally, topical applications are not to be neglected. Where the bite is in a part that will admit of it, a ligature, as proposed by Dr. Percival, should be applied above the cicatrized wound. This will prevent farther absorption. At the same time the bitten part may be opened or destroyed by the application of lunar caustic, or concentrated mineral acids. After the corrosion of the cicatrized

wound by the means just mentioned, the ligature which had been passed round the limb should be removed.

Such is the plan proposed by Dr. Pearson, which being novel, it seemed right to notice. Whether stimulants are really useful and powerful remedies in the treatment of hydrophobia or not, can only be determined on trial, and not on any previous view of the nature of the disease which theory may suggest.

It now remains only to observe, that during the furious stage of the disease the greatest care must be taken that the patient is so confined by means of a strait waistcoat, as to be rendered incapable of doing any injury either to his attendants or himself. As long as he can swallow, his strength is to be supported by things that are light and nutritive, and when deprived of this power, clysters of animal broths must be injected. To assuage his thirst, wine and water may be poured down his throat from the spout of a tea-pot; but if his dread at liquids and act of deglutition are insurmountable, a sponge dipt in warm vinegar may be kept constantly to his mouth and nostrils.

If great costiveness prevails at any time in the course of the disease, it should be removed by a laxative clyster. If this fails in procuring the desired effect, the purgative pills advised below* may be given.

In cases of hydrophobia, fluids might be conveyed into the stomach, and the patient's strength supported, by means of Mr. Jukes's apparatus, consisting of a long tube of elastic gum with a large syringe attached thereto (see Vegetable Poisons), or in the manner practised by the late Mr. John Hunter in a patient who was afflicted with a paralysis of the œsophagus, and consequently unable to swallow any nutriment†. The instrument made use of was a fresh eel-skin, of rather a small size, drawn over a probang, and tied up at the end where it covered the sponge, and tied again close to the sponge where fastened to the whalebone, a small longitudinal slit being made into it just above this upper ligature. To the other end of the eel-skin was fixed a bladder, and a wooden pipe, similar to what is used in giving a clyster, only the pipe being large enough to let the end of the probang pass into the bladder without filling up the passage. The probang, thus covered, was introduced into the stomach, and both food and medicines being put into the bladder were squeezed down through the eel-skin.

As cases however of this kind may occur where eel-skins cannot be procured, a portion of the gut of any small animal will make a

† See Transactions of a Society for the Improvement of Medical Knowledge, vol. i.

* 3. R Extract. Colocynth. C. ʒj.

Hydrargyri Submuriat. gr. v.

Ol. Carui, ℥ iij. M.

ft. Massa, in pilulas vj. dividenda.

* 3. Take Compound Extract of Colocynth,
one scruple.

Submuriate of Mercury, five
grains.

Oil of Carraway, five drops.

Mix them, and divide the mass into six pills.

good substitute. By this mode, whatever fluids are administered would not come in contact with the irritable parts of the gullet.

COLICA, OR COLIC.

COLIC is a painful distension of the whole of the lower region of the belly, with a twisting round the navel in particular, often accompanied with vomiting, costiveness, and a spasmodic contraction of the muscles of the abdomen.

The disease is produced by various causes, such as crude and acescent food, flatus, a redundance of acrid bile, long-continued costiveness, hardened fæces, certain metallic poisons, derangement of the primæ viæ, metastasis of gout or rheumatism, hysteria, the application of cold and moisture, worms in the intestinal tube, and the having swallowed poisonous substances. It has commonly been considered as being of different species, and has been variously denominated, according to the cause which has given rise to it, as the bilious, the flatulent, and the hysteric: but in all of them the proximate cause seems to be the same, viz. a spasmodic constriction of some part of the intestines.

In the bilious colic there is loss of appetite, bitter taste in the mouth, thirst, febrile heat, costiveness, and a vomiting of bilious matter, attended with an acute pain all round the region of the navel; and as the disease advances, the former becomes more frequent, and the latter more severe and lasting.

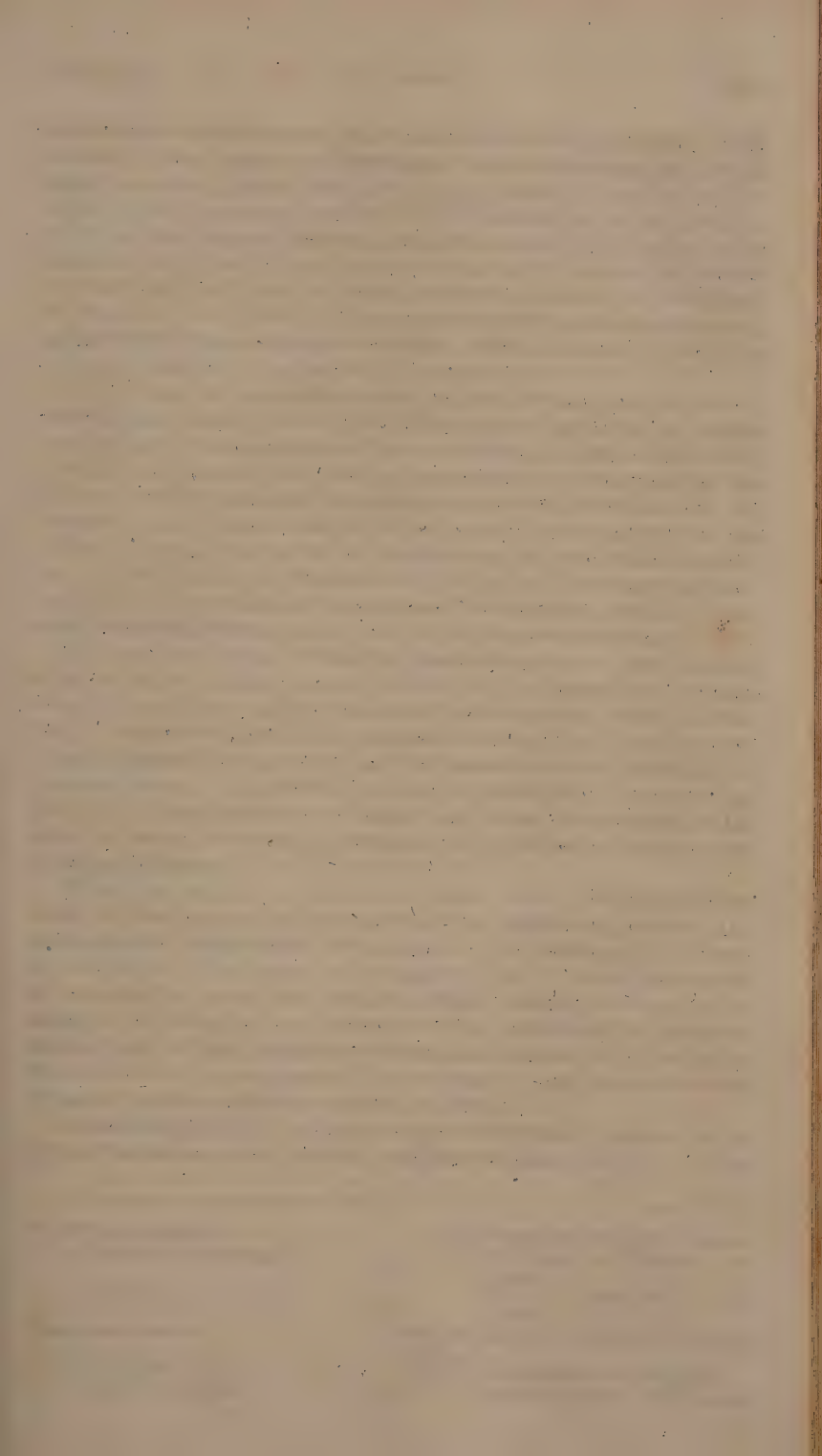
In the flatulent colic there is great costiveness, attended with pain, soreness and griping of the bowels, a rumbling noise, distention of the stomach, an inclination to throw up, and coldness of the extremities.

In the hysteric colic there is nausea and sickness at the stomach, accompanied with severe spasms, costiveness, and dejection of spirits.

The disease, when rising to a violent height, and attended with a stercoraceous vomiting, obstinate costiveness, and an evacuation of fæces by the mouth, constitutes what is called the iliac passion. In this, as well as in intus-susceptio, the peristaltic motion is inverted, and a high degree of inflammation is the consequence.

The colic is to be distinguished from enteritis by the spasmodic contraction of the abdominal muscles, by the absence or trifling degree of fever, by the state of the pulse, which is frequent but full, and by the diminution of the pain upon pressure of the abdomen: whereas in enteritis, there are no spasms, but a considerable degree of fever, the pulse is quick and small, and the abdomen extremely tender to the touch.

When the pain remits, or shifts its situation, not being obstinately confined to one place, and when the patient experiences considerable ease after a discharge either of wind or fæces, and stools are obtained, we may have reason to expect a favourable



termination to the disease : but the sudden cessation of pain, with the costiveness remaining obstinate, cold sweats breaking out, a weak tremulous pulse, frequent syncope, and the ensuing of hiccups, denote supervening inflammation terminating in gangrene.

When the disease proves mortal, the usual appearances to be observed on dissection are, inflammation on the surface of the intestines, distension and irregular contraction of some particular part of the tube, or a passing of one portion of it within another to a considerable extent, the part received within the other being in a contracted state, or probably gangrenous.

In all cases of colic, where the patient is young and vigorous, and the symptoms proceed with such violence as to endanger the ensuing of an inflammation of the intestines, it will be advisable to take away some blood, being regulated as to the quantity by the state of the pulse and the appearance of what is drawn off. In repeating the operation we are to be guided by the severity of the attack, the continuance of the constriction on the intestines, the habit of the patient, and the state of the pulse ; for although drawing blood may sometimes be necessary in the colic, there is, however, no necessity for carrying it to the extent we would in enteritis.

In the bilious colic, if there is great irritation at the stomach with frequent vomiting, we may direct a saline draught to be taken every two or three hours in the act of effervescence, with an addition of about five-and-twenty drops of tinctura opii ; but if only a nausea prevails, the patient may be made to drink plentifully of chamomile-tea. Externally we may apply flannel cloths wrung out in a warm decoction of emollient herbs, or a bladder filled with hot water, interposing between the paroxysms frictions with anodyne liniment.

When the nausea and vomiting have ceased, he should take some active purgative* to carry off the offending matter, the operation of which may be assisted by a free use of diluent liquors, such as thin gruel and animal broths. Should the purge be rejected by the mouth, or not operate quickly, we must then attempt to dislodge the contents of the intestines by clysters, making use of mild laxatives at first, and afterwards resorting to those which are more powerful, if necessary ; and these are to be repeated until a sufficient effect is produced.

In the flatulent colic we may begin the cure by giving a wine-glass, of some aromatic cordial combined with an opiate†. If re-

* 1. R Pulv. Jalapæ, ʒss.
Hydrargyr. Submur. gr. v.

Syr. Rhamni, q. s. M.

Fiant pilulæ v. pro dos.

† 2. R Aq. Mentli. Pip. f. ʒj.
Spirit. Carui, f. ʒss.

* 1. Take Powder of Jalap, half a drachm.
Submuriate of Mercury, five grains.
Syrup of Buckthorn, a sufficiency.

Form the mass into five pills, to be taken for a dose.

† 2. Take Peppermint Water, one ounce.
Spirit of Carraway, half an ounce.

lief is not soon obtained, a carminative clyster* may be injected every three or four hours, and warm fomentations, with an addition of rectified spirit, be applied over the whole region of the belly. Should clysters not procure a copious evacuation of fæces and wind, some stomachic purgative† may be administered by the mouth. Ammonia, joined with carminatives, will be very proper in the flatulent colic.

If the disease continues to increase with violence notwithstanding these means, so as to threaten the approach of an inflammation in the bowels, we must then resort immediately to bleeding, the warm bath, and blistering over the part more particularly affected. On apprehending a similar consequence in the bilious colic, we may adopt the same means.—See Enteritis.

In the hysteric colic it will seldom be necessary to make use of evacuation; but should obstinate costiveness prevail, it will be

Tinct. Lav. C. f. ʒj.

— Opii, ℥xx. M.
ft. Haustus.

Vel,
3. R Tinct. Cardam. C. f. ʒiij.

— Opii, ℥xxv.
Aq. Mentb. Pip. f. ʒiiss. M.

ft. Haustus.

* 4. R Sem. Anis. Contus.
Flor. Anthemidis, aa ʒss.

Coque ex Aq. Fontan. Ojss. ad ʒxj. et
colaturæ adde

Sodæ Sulphat. ʒvj.
Ol. Ricini, f. ʒj. M.

ft. Enema.

Vel,
5. R Ol. Terebinth. f. ʒss.
Vitel. Ovi, q. s.

Misceantur in mortario marmoreo, dein adde
gradatim

Decoct. Avenæ, f. ʒxj.

ft. Enema.

† 6. R Tinct. Sennæ C. f. ʒj.

— Jalapæ, f. ʒj. M.

ft. Haustus.

Vel,
7. R Infus. Sennæ Comp. f. ʒv.

Tinct. ejusd. C. f. ʒvj.

Magnes. Sulphat. ʒj.
Syrup. Zingib. f. ʒss. M.

ft. Mistura, cujus capiat æger cochlearia tria
magna omni bihoria donec alvus purgetur.

Compound Tincture of Lavender,
one drachm.

Tincture of Opium, thirty drops.

Make them into a draught.

Or,

3. Take Compound Tincture of Carda-
moms, three drachms.

Tincture of Opium, forty drops.

Peppermint Water, one ounce
and a half.

Mix them for a draught.

* 4. Take Aniseed, bruised,
Chamomile Flowers, of each half
an ounce.

Pure Water, one pint and a half.

Boil them slowly until the water is reduced
to eleven ounces, and to the strained
liquor add

Sulphate of Soda, six drachms.

Castor Oil, one ounce.

Mix them for a clyster.

Or,

5. Take Oil of Turpentine, half an ounce.
Yolk of Egg, a sufficiency.

Mix them well together in a marble mortar,
then slowly add

Thin Water Gruel, twelve ounces.

Mix them for a clyster.

† 6. Take Compound Tincture of Senna, one
ounce.

Tincture of Jalap, one drachm.

Mix them for a dose.

Or,

7. Take Compound Infusion of Senna, five
ounces.

Compound Tincture of the same,
six drachms.

Sulphate of Magnesia, one ounce.

Syrup of Ginger, half an ounce.

Of this stomachic purgative let the patient
take three table-spoonsful every two hours
until the bowels are well moved.



proper to give some gentle laxative*, administering at the same time every four or six hours the clyster of turpentine recommended in the flatulent colic, as I have known it in many instances to have been attended with much benefit, and this almost immediately. If a vomiting attends, the stomach may be cleansed by drinking one or two cupsful of chamomile-tea, after which the patient may be ordered some antispasmodic medicine†.

When a colic of any kind proceeds with great violence, and terminates in an inversion of the peristaltic motion, or iliac passion (as it is usually called), notwithstanding the means which have been recommended have all been employed, it then becomes advisable to have recourse to the injection of tobacco clysters, which herb may be used either in the form of infusion‡ or that of smoke. Where even these fail, it has been customary to attempt a mechanical dilatation of the intestines, by giving a large quantity of quicksilver by the mouth. The practice seems, however, attended with a considerable degree of danger; for should the inversion of the peristaltic motion have arisen in consequence of intus-susceptio, which is sometimes the case, the complaint, instead of being relieved by the remedy, would certainly be increased by it.

A surer and much safer method of employing mechanical dilatation is by injecting a large quantity of tepid water by a proper-sized syringe, which will throw it into the rectum in a continued stream, and with some force, the patient drinking copiously at the same time. Some persons have borne two gallons to be injected in this way, and the cases were attended with the desired success. In those instances where there is an accumulation of hardened fæces in the colon, these large injections seem to be a powerful remedy, as they serve the two intentions of dilating the passage and of softening the fæces.

Obstinate constipations, arising from an accumulation of indurated fæces in the rectum, and attended with severe colic pains

* 8. R Pulv. Rhei, ʒj.
Spirit. Anisi, f. ʒss.
Aq. Cinnam. f. ʒj.
Tinct. Jalapæ, f. ʒj. M.
ft. Haustus, statim sumendus.

† 9. R Aq. Anethi, f. ʒivss.
Spirit. Æther. Sulphur. f. ʒj.
—— Ammon. Fœtid. f. ʒss.
Tinct. Opii, ℥xxxij.
—— Castor. f. ʒss. M.

ft. Mistura, cujus sumat cochl. magna ij. ter-
tiis vel quartis horis.

‡ 10. R Fol. Tabaci, ʒss.—ʒij.
Aquæ Bullient. f. ʒxij.
Post semihoram col. pro enemate.

* 8. Take Powdered Rhubarb, one scruple.
Spirit of Aniseed, half an ounce.
Cinnamon Water, one ounce.
Tincture of Jalap, one drachm.
Make them into a draught, which is to be
taken immediately.
† 9. Take Dill Water, four ounces and a
half.
Spirit of Sulphuric Æther, one
drachm.
Fetid Spirit of Ammonia, half a
drachm.
Tincture of Opium, fifty drops.
—— Castor, half an ounce.

Of this mixture two large spoonful may be
taken every three or four hours.

‡ 10. Take Tobacco, half a drachm to two
scruples.
Boiling Water, twelve ounces.
After infusing for half an hour, strain off the
liquor, and administer the clyster.

which resisted the usual means of relief, have been removed by introducing the finger, or scoop used in lithotomy, in ano, and then breaking and loosening the scybala. Two cases of this nature are recorded in the *Edinburgh Medical Commentaries* for the year 1795, which undoubtedly suggest an important caution ; to advert to the cause above pointed out, in cases of obstinate costiveness and colic, where the usual means of aperient medicines and clysters have had a reasonable trial, without the desired effect.

Throwing cold water on the extremities, or applying pounded ice, snow, or towels wetted with a solution of ammonia muriata and nitre in cold water to the region of the belly, have been found, in some cases of obstinate constipation, to have been attended with a good effect, where all other remedies have failed.

It is well known, that many people have a skin of so irritable a texture that if exposed to cold it will bring on a purging. In all constitutions cold increases the peristaltic motion of the intestines ; and again, if cold is applied to the external surface of the body, even although the bladder is not full, there will be a strong inclination to empty it.

Those who are subject to attacks of the colic should cautiously abstain from all kinds of crude, flatulent food, and from fermented liquors : they should also avoid, as much as possible, any exposure to wet and moisture, taking due care to obviate costiveness by a timely use of some gentle laxative, and to wear flannel next to the skin.

COLICA PICTONUM, OR THE DRY BELLY-ACH.

THE characteristics of this disease are, obstinate costiveness, with a vomiting of acrid or porraceous bile, pains about the region of the navel, shooting from thence to each side with excessive violence, strong convulsive spasms in the intestines and abdominal muscles, with a tendency to a paralysis of the extremities.

It is occasioned by long-continued costiveness ; by an accumulation of acrid bile ; by cold applied either to the extremities or to the belly itself ; by a free use of unripe fruits ; by great irregularity in the mode of living ; by acrid food or drink, such as sour wines or cider ; and by the inhalation of vapours arising from a decomposition of lead, or frequently handling some of its chemical preparations ; hence painters and glaziers are frequently attacked by it. From the disease occurring frequently in Devonshire and other cider counties, it has generally been supposed to arise from an impregnation of lead received into the stomach ; and it seems now to be perfectly understood that the malic acid of the apple takes up in solution a portion of the lead of the vats employed in manufacturing the cider, which soon acts on the stomach of those who drink this liquor abundantly, and produces the disease in question.

It is true, however, that the effect of some metals in destroying or preventing the acidity of cider or wine, often induces dealers in these articles to employ some of the preparations of lead for this purpose.

A dreadful disease of a similar nature with the colic under investigation, and caused by the destructive fumes of melted lead, is known to be very prevalent among those who are employed in smelting or preparing this metal, and is said to attack even those who live near the furnaces. It passes in many places under the name of the mill-reek.

Colica pictonum comes on gradually with a pain at the pit of the stomach, extending downwards to the intestines, particularly round the navel, accompanied by eructations, slight sickness at the stomach, thirst, anxiety, obstinate costiveness, a frequent but ineffectual desire to evacuate the contents of the bowels, and a quick contracted pulse, but seldom exceeding one hundred in a minute. After a short time the pains increase considerably in violence, the whole region of the belly is highly painful to the touch, the muscles of the abdomen are contracted into hard irregular knots or lumps; the intestines themselves exhibit symptoms of violent spasm, insomuch that a clyster can hardly be injected from the powerful contraction of the sphincter ani; and there is constant restlessness, with a frequent vomiting of an acrid or porraceous matter, but more particularly after taking either food or medicine.

Upon a further increase of the symptoms, or their not being quickly alleviated, the spasms become more frequent as well as violent, the costiveness proves invincible, and an inflammation of the intestines ensues, which soon destroys the patient by terminating in gangrene. In an advanced state of the disease it is no uncommon occurrence for dysuria to take place in a very high degree.

Due attention will be necessary in distinguishing accurately between enteritis and colica pictonum. The symptoms which characterize the latter, and distinguish it from the former, are these: the pain at first is rather more in the pit of the stomach; it afterwards fixes itself at the umbilicus, and thence darts in all directions over the abdominal viscera, accompanied by such a retraction of the abdominal muscles, as to oblige the patient to lean forward, as the only posture in which he feels at all easy, whilst at the same time the circulation does not appear to be affected. In enteritis the abdomen is tumid, hard, and painful, but the pain seems concentrated, and does not diverge as in those spasmodic twitchings or dartings observed in colica pictonum: moreover the pulse is quick, although usually small. In colica pictonum, besides the rigidity and retraction of the muscles, the belly seems pressed down towards the spine with a force proportional to the degree of spasm. In enteritis there is little or no spasm; but in the other disease, there is soon perceived a dispo-

sition to paralysis in the extremities, and often a contraction of the joints, which never take place in enteritis.

The palsied and dropping hand, and slightly contracted fingers, unaccompanied by spasm in the upper extremities, or by any affection of the lower, supervene with remarkable uniformity in the colic to which painters and glaziers are liable from constantly handling white lead.

Colica pictonum is always attended with some degree of danger, but which is ever in proportion to the violence of the symptoms and the duration of the disease. Even when it does not prove fatal, it is too apt to terminate in palsy, and to leave behind it contractions of the hands and feet, with an inability in their muscles to perform their office; and in this miserable state of existence the patient lingers out many wretched years. Such consequences are very frequent in warm climates, and many fell under my immediate care and observation during my practice in the West Indies. When this colic is induced by lead, it is more obstinate and longer protracted than when brought on by other causes.

Dissections of this disease usually shew the same morbid appearances as in common colic, only in a much higher degree.

In all complaints of the intestines partaking of the nature of colic, it will be proper to make inquiries respecting the patient's habits of life; and if these be discovered to subject him to the influence of lead, the identity of the disease is proved beyond the possibility of doubt.

The indications of cure in the colica pictonum seem to be,

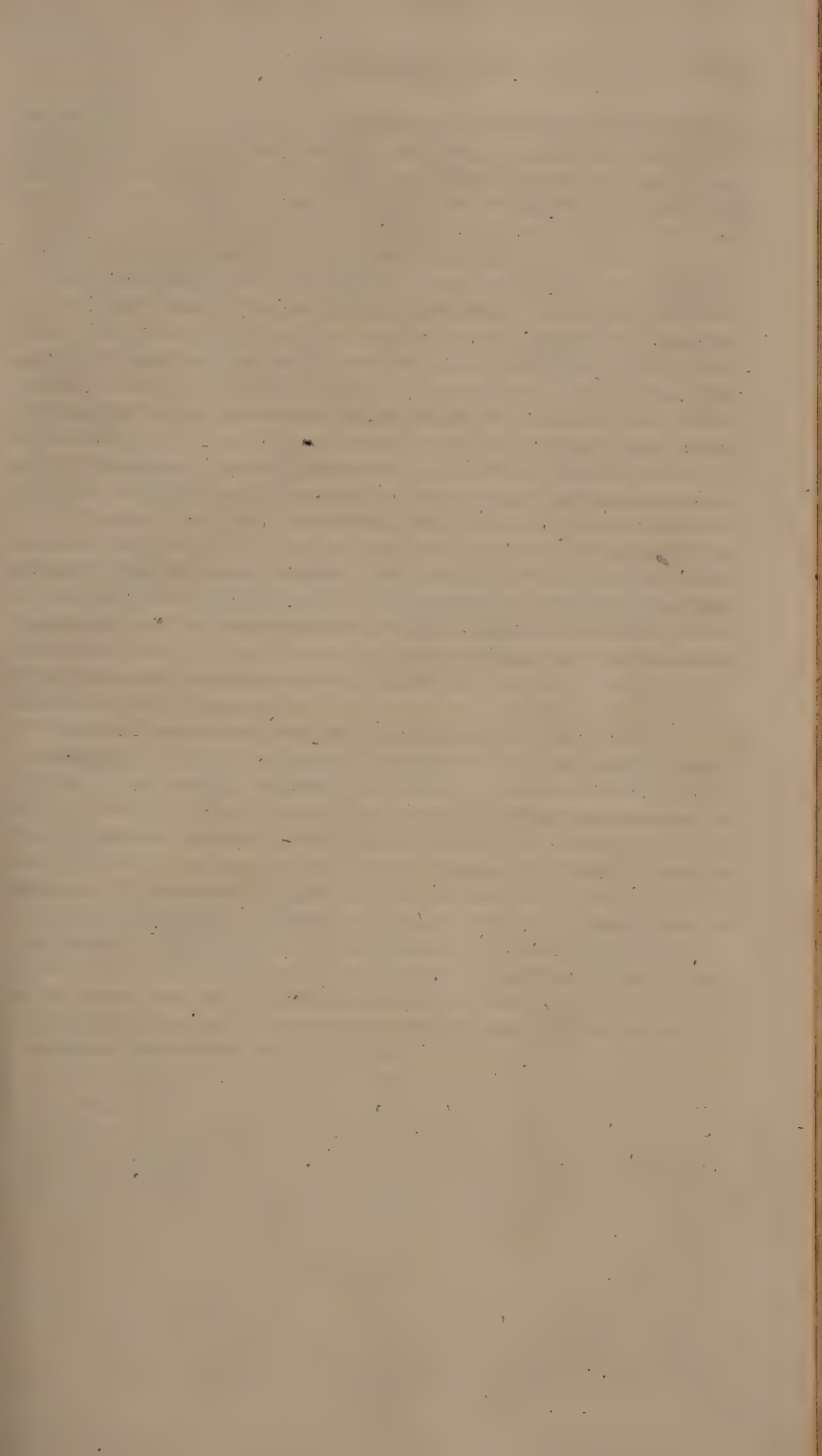
1st, To guard against the consequences of inflammation, where the attack is severe, and the patient young and plethoric.

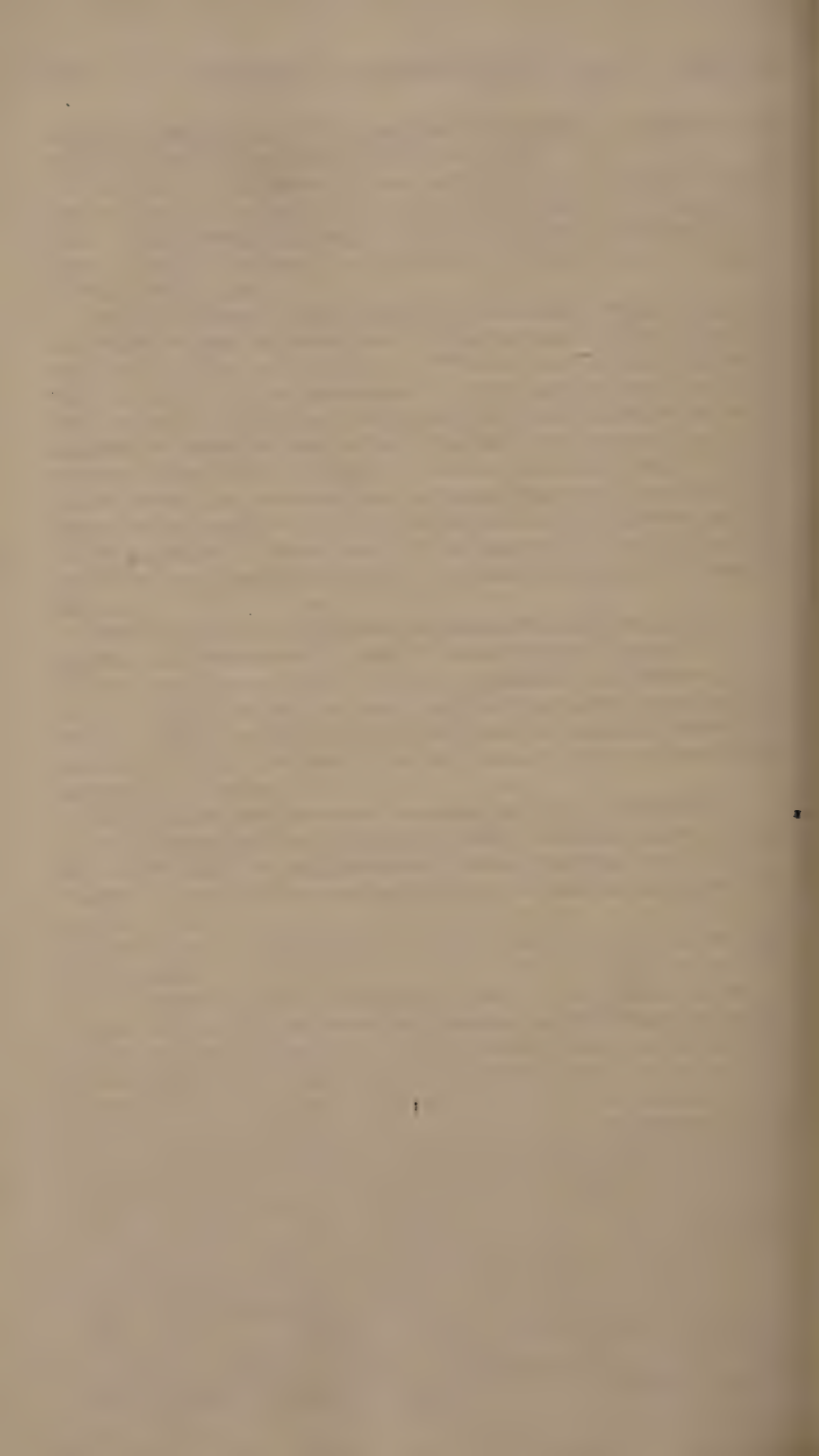
2dly, To take off the spasm, by means of various antispasmodic powers; and,

3dly, To excite the action of the intestines by purgatives and other means.

To answer the first of these intentions, if the symptoms are so violent as to endanger the taking place of an inflammation of the intestines, it will be advisable to draw off a quantity of blood proportionate to the age and habit of the patient, and that at an early period of the complaint.—(See Enteritis.) I am sensible that bleeding has been disapproved of by some practitioners in this disease, on the supposition of its being purely spasmodic; but as inflammation, and its fatal termination in gangrene, have occasionally ensued, when the disease has run on for many days, it seems to be an advisable operation in those cases where the symptoms run high at first. In debilitated habits, elderly people, and mild attacks, its use may with propriety be dispensed with.

The step advised being adopted, when judged necessary, we should next resort to antispasmodics for the purpose of answering the second intention, viz. that of removing the spasms. The remedies in general use for this purpose are, fomentations applied





to the abdomen by means of flannel cloths wrung out in a warm decoction of poppy-heads with an addition of rectified spirit; frequent immersion in a warm bath; or taking the patient out of bed, making him walk on a cold damp floor barefooted, throwing at the same time cold water on his feet, legs, and thighs; and the internal use of opium in considerable doses.

Two obstinate cases of colica pictorum, arising from exposures to cold, very lately came under my care, which resisted fomentations, the warm bath, anodyne and tobacco clysters, the internal use of opium and cathartics, and which at last were readily and quickly removed by placing the patients in a large tub, and throwing a pail of cold water over the abdomen and thighs. The operation was not required a second time, for copious evacuations soon took place, after which the spasmodic affection was prevented from returning by small doses of opium repeated from time to time.

The benefit obtained by dashing cold water upon the abdomen and extremities in this disease and ilius, seems to be owing to the sympathy which exists between them and the intestines; the fibres of the latter become relaxed, while the sudden contraction of the vessels on the skin, in consequence of the application of cold, determines the flow of blood inwardly, and occasions a copious secretion from the intestinal surface, whereby a free expulsion of their contents quickly ensues.

Where these means fail to produce the desired effect, it is customary to have recourse to anodyne* or tobacco clysters, either in the form of infusion or smoke. Tobacco administered in the form of infusion, as advised in colic, where an inversion of the peristaltic motion takes place, is equally efficacious, and less indeterminate as to the dose, than when employed by way of smoke. The remedy acts by exciting nausea and syncope, during which the spasmodic affection is relieved, and the constriction on the intestine, if any exists, often removed. It sometimes, however, depresses the living power in the system to so alarming a degree, as to intimidate the bystanders, and to make the patient very reluctantly submit to any repetition of its use. Great caution is therefore necessary in employing it.

The application of a large blister to the abdomen may prove sometimes useful.

In those cases where, from the great irritability of the stomach, we cannot get opium † to sit long enough on it, so as to produce the desired effect, it probably might be attended with advantage to convey it into the system by means of friction, as in the forms

* 1. R Infus. Sennæ, f. ʒx.
Opii, gr. iij. Solv. pro Enemate.

† 2. R Pilul. Sapon. cum Opio, gr. v. pro
dos.

* 1. Take Infusion of Senna, ten ounces.
Opium in solution, three grains.
Mix them for a clyster.

† 2. Take Soap Pill with Opium, five grains
for a dose.

advised below *, repeating it at short intervals of about two hours, until some sensible effect is observed.

This mode of introducing opium into the system has been adopted by many practitioners in various diseases, particularly by Mr. Ward, surgeon to the Manchester Infirmary. He informs us †, that from frequent trials, he thinks himself warranted in drawing the following inferences: 1st, That opium, when diligently applied externally, so as to be absorbed by the lymphatics, has powerful effects in allaying irritation, removing spasm, and procuring sleep. 2dly, That it is capable of producing these happy effects where the exhibition of it internally had not the same salutary operation. 3dly, That this mode of introducing it into the system may be resorted to with advantage when it cannot be given internally, or when it will not sit on the stomach.

As soon as the spasms suffer some little relaxation, and the stomach is somewhat composed, we should advise a mild cathartic‡ to be taken, as the oleum ricini, tinctura sennæ composita, or a solution of some purgative salt; assisting the operation of the medicine by administering a laxative clyster || every three or four hours, should the desired effect not be produced speedily. If stools are not procured by these, we must have recourse to more active purgatives.

In colica pictonum, where there is great irritability of the stomach with frequent vomiting, we should give a preference to the hydrargyri submuriæ over most other purgatives, as it may

† See Medical and Physical Journal for July 1799, page 447.

* 3. R Opii Pulv. Subtilis. ʒss.—ʒi.

Camphoræ, gr. xv.

Adipis Præparat. ʒi. M.

ft. Unguentum.

Vel,

4. R Spirit. Camphoræ, f. ʒi.

Tinct. Opii, f. ʒss. M.

ft. Linimentum.

† 5. R Ol. Ricini, f. ʒss.

Mucilag. Gum. Acaciæ, q. s. Misceantur in mortario, et adde

Aq. Ment. Pip. f. ʒj.

Tinct. Opii, m̄ xvij. M.

ft. Haustus, sextis horis sumendus.

|| 6. R Extract. Colocynth. ʒss.

Infus. Sennæ, f. ʒx.

Sodæ Sulphat. ʒss.

Ol. Ricini, f. ʒi. M.

ft. Enema.

* 3. Take Opium in fine Powder, half a drachm to one drachm.

Camphor, rubbed down, fifteen grains.

Prepared Lard, one ounce.

Mix them.

Or,

4. Take Camphorated Spirit, one ounce.

Tincture of Opium, half an ounce.

Mix them, and use them as a liniment.

† 5. Take Castor Oil, half an ounce.

Mucilage of Gum Acacia, a sufficiency; mix them in a mortar, then add gradually

Peppermint Water, one ounce.

Tincture of Opium, twenty-five drops.

Mix them, and let this draught be taken every six hours.

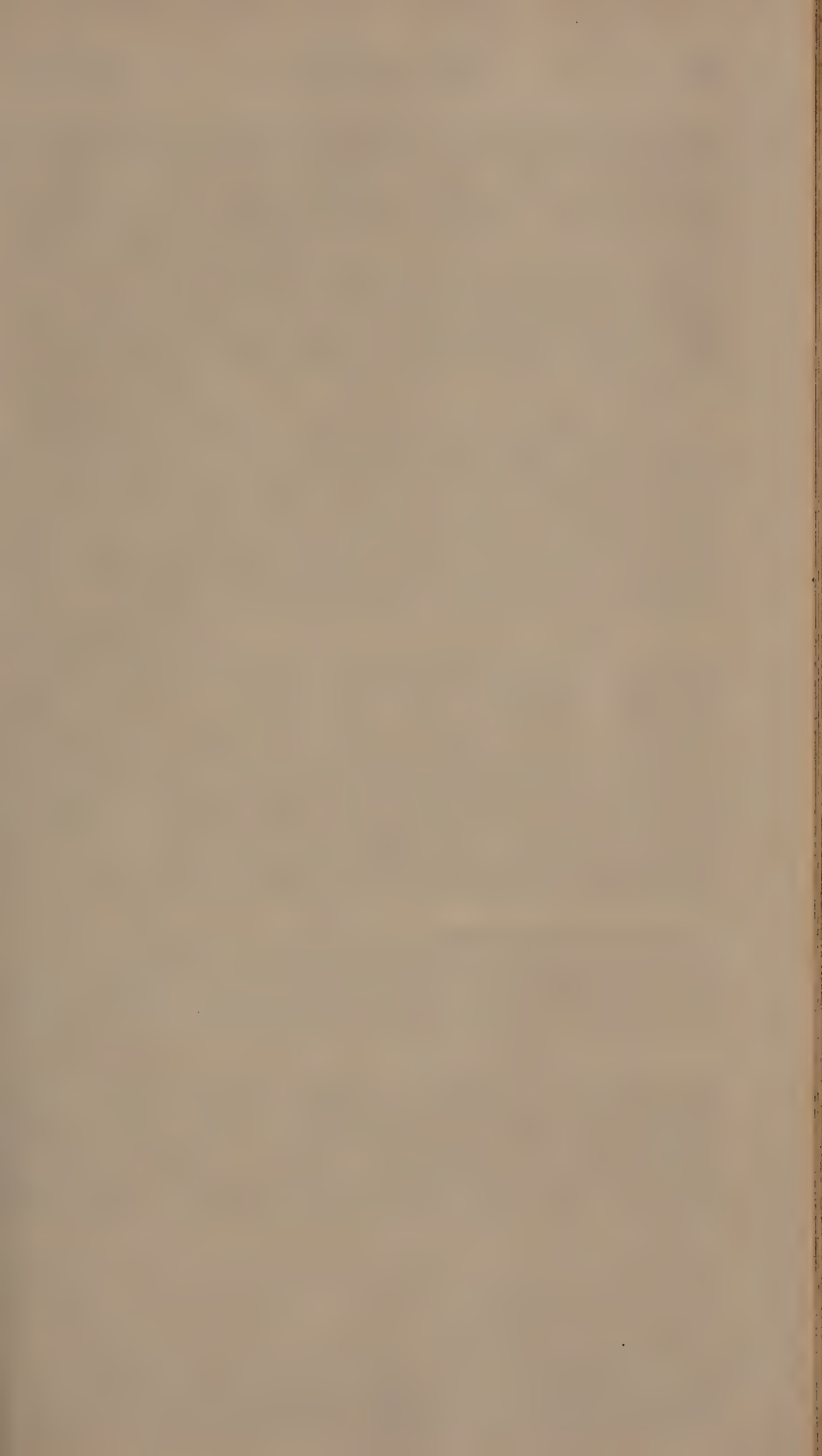
|| 6. Dissolve Extract of Colocynth, half a drachm, in

Infusion of Senna, ten ounces, and add

Sulphate of Soda, half an ounce.

Castor Oil, one ounce.

Mix them for a clyster.



be administered in the form of pills*, which will be less likely to be rejected than any medicine in a liquid form. According to the severity of the pains, we are to continue the use of opium, either joined with cathartics or given separately: but perhaps the former might be preferable.

The oil extracted from the seeds of the croton tiglium is an active purgative, and would seem to be of particular use, where, from great irritability of the stomach being present, medicines in any quantity or bulk cannot be retained on it. The proper dose is two drops on a bit of sugar, or with a little crumb of bread formed into a pill.

When our endeavours to put a stop to the vomiting and spasms, as likewise to procure stools, are crowned with success, we are then carefully to guard against a return of the disease by keeping the body regular and open with some aperient medicine, giving small doses of opium from time to time, and by cautioning the patient against exposing himself to cold or any other occasional cause. The tone of the primæ viæ is afterwards to be restored by a use of tonics and stomachic bitters, as recommended for the cure of Dyspepsia.

Should a tingling sensation be felt down the spine, together with a feebleness and numbness in the extremities, the parts affected may be rubbed with some kind of stimulating application, as advised under the head of Palsy; besides which, the patient should frequently make use of warm bathing, always giving a preference to natural baths where they can be resorted to. In addition to these remedies, a long-continued use of cinchona bark, bitters, chalybeates, and friction with a flesh-brush, assisted by electricity, may be employed. Flannel should be worn next to the skin.

The paralysis, or loss of power in particular limbs, which is one of the serious consequences resulting from the poison of lead, is found to be peculiarly relieved by a use of the Bath waters when applied externally, either generally or upon the part affected.

The mode in which these waters are prescribed in this complaint, is by bathing and pumping; the former three times in the week, the latter on the diseased limbs and spine, to the amount of four or five hundred strokes every other day. When there is considerable debility and want of due tone in the stomach, the waters may be administered internally with very great ad-

* 7. R. Hydrargyri Submuriat. gr. v.

Extract. Colocynth. C. gr. vj.

Opii, gr. j.

Ol. Carui, ℥ iij. Contunde simul,
et fiant pilulæ iij. quarta quaque hora
sumendæ, donec alvus probe respondeat.

* 7. Take Submuriate of Mercury, five grains.

Extract of Colocynth, six grains.

Opium, one grain.

Oil of Carraway, five drops.

Mix them well, then divide them into three pills, repeating the dose every four hours, until the bowels act freely.

vantage*. The waters also of Bareges and Aix-la-Chapelle are said to be highly useful in paralysis arising from the poison of lead.

In an ingenious pamphlet published by Dr. Clutterbuck †, several cases are given of the successful use of mercury in the colic and paralysis of the wrists, produced by lead; and therefore, when the disease is clearly ascertained to have arisen from this mineral, it may be advisable to adopt the plan which he pursued. In some of these patients, a drachm of strong mercurial ointment was rubbed morning and night on the wrists, till the mouth became sore. In others, one grain of hydrargyri submuriatis was given daily with oleum ricini; and in others a quarter of a grain of the hydrargyri oxymuriatis was given three times a day with great apparent advantage.

In the colic of painters, mercury with opium, followed by sulphate of magnesia and other laxatives, appears to be the best mode of cure. Sulphur, or sulphureous waters, had best be avoided, as being likely to prove deleterious.

Where paralysis of the wrists has been the consequence of colica pictonum, and this has arisen from exposure to saturnine emanations, although the cure has always been protracted and doubtful, the nitrate of silver has, however, been found a powerful agent in overcoming both the cause of the spasmodic contractions and the consequent paralysis, and possibly the complaint may now be regarded as under the control of art ‡.

The remedy may be administered in doses of from one to three grains three or four times a day, preceded by a dose of castor oil. From the activity of its operation on the bowels, it may be necessary to combine it occasionally with opium, and to give it in solution instead of a solid form, as intestinal hæmorrhage has been known to result from its exhibition in an undiluted state.

In the treatment of that species of palsy which is produced by the poison of lead, and which is apt to ensue after severe attacks of colica pictonum when excited by this mineral, Dr. Pemberton is of opinion ||, that besides the remedies appropriate to the removal of the original disease, some assistance of a mechanical nature might be applied likewise for the purpose of relieving the topical paralysis, by placing the muscles in such a state as that they might be again enabled to resume their lost action; and for this purpose he recommends the use of an ingenious mechanical contrivance, which the reader will find fully described under the head of Palsy.

It has been mentioned before, that the effect of some metals in destroying or preventing the acidity of cider or wine, often

* See Treatise on the Bath Waters, by Mr. J. H. Spry.

† See his Treatise on the Poison of Lead.

‡ See London Medical Transactions of the Royal College of Physicians, vol. v. art. 4th.

§ See his Treatise on the Diseases of the Adominal Viscera, p. 155.

induces dealers in these articles to employ some of the preparations of lead for this purpose. The method most in use for discovering the injurious mixture of litharge with wine, is by pouring into it some sulphuric acid, which causes a white precipitate to fall to the bottom of the vessel. This is not, however, so accurate a test of lead as water charged with sulphuretted hydrogen, which is thus prepared: Put into a phial a paste of sulphur and iron filings, pour on it a little sulphuric acid, and pass the gas produced into a flask of water by a bent tube.

This water, poured on wine mixed with litharge, renders it black and flaky, and produces an abundant precipitate, which soon falls to the bottom of the vessel.

CHOLERA MORBUS, OR VOMITING AND PURGING.

FREQUENT and violent discharges of bilious matter, both upwards and downwards, with painful gripings, constitute the disease called cholera morbus.

In warm climates it is met with at all seasons of the year, and its occurrences are very frequent; but in England and other cold climates it is apt to be most prevalent in the autumn, when there is excessive heat, or there are sudden transitions from heat to cold; and the violence of the disease has usually been observed to be greater in proportion to the intenseness of heat. These circumstances naturally induce us to presume that cholera morbus is the effect of a warm atmosphere producing some change in the state of the bile; which change may consist either in the matter of the bile being rendered more acrid, or its being secreted in a preternatural quantity. In some instances the disease has been observed to proceed from obstructed perspiration, and likewise from food which has passed readily into the acetous fermentation, from unripe fruit, and acrid ingesta: but these causes probably would not give rise to it without the predisposition acquired by preceding great heat, succeeded by sudden transitions to cold, particularly in the evenings.

That the functions of the liver are greatly deranged in cholera morbus is very certain; but that the symptoms are caused wholly by the action of bile upon the mucous surfaces, is now, I believe, acknowledged to be an erroneous opinion. When it is considered that there is a cold stage antecedent to that of action and excitement, and that the vomiting and purging exist for some hours before the bile appears in the matter ejected, it must be evident that there is a highly excited state of the mucous surfaces, wholly independent of the biliary secretion. The causes of cholera morbus, as well as the symptoms and the appearances after death, evince clearly that the disordered action affects both the intestinal mucous surfaces and the liver.

The disease usually comes on with nausea, soreness, pain, distension, and flatulency in the stomach, and acute griping pains in the bowels, succeeded after a time by a severe and frequent vomiting and purging of bilious matter, heat, thirst, a hurried respiration, and a frequent, but weak and fluttering pulse.

When the disease is not violent, these symptoms, after continuing for a day or two, cease gradually, leaving the patient in a debilitated and exhausted state; but where the disease proceeds with much violence, there arises great depression of strength, with cold clammy sweats, considerable anxiety, a hurried and short respiration, cramps in the legs, coldness of the extremities, and hiccups, with a sinking and irregularity of the pulse, which quickly terminate in death; an event that not unfrequently happens within the space of twenty-four hours.

Cholera morbus is to be distinguished from diarrhœa and dysentery by the matter which is discharged by stool being pure bile, unmixed with blood or mucus, and with scarcely any admixture of fæces. It may be distinguished from colica pictonum by the evacuations: for in the latter, although there is sometimes a considerable quantity of bilious matter thrown off by vomiting, yet the bowels remain obstinately costive.

Our opinion must ever be unfavourable, when the evacuations upwards and downwards are accompanied by great prostration of strength, much distension of the abdomen, intermitting pulse, cold clammy sweats, a short hurried respiration, constant hiccup, spasms of the extremities, or convulsions: but a gradual diminution of the symptoms, especially the vomiting, succeeded by sleep, or a gentle moisture on the skin, may be regarded in a favourable light.

The appearances generally to be observed on dissection, where cholera terminates fatally, are an accumulation of bile in the stomach and intestines, particularly in the duodenum; relaxation and distension of the biliary ducts and choledochus; and a removal of many of the viscera from their proper places, occasioned probably by the violence of straining in vomiting.

From the very irritable state of the stomach on the first attack of the disease, it is almost impossible for any kind of medicine to be retained on it, and every thing is thrown up again almost as soon as swallowed. To abate this irritation and evacuate the redundant or acrid bile, it will be necessary during this stage of the disorder, to make the patient drink plentifully of diluent liquors, such as barley-water, linseed-tea, rice-gruel, animal broths, or toast and water; and to assist the effect of their operation, tepid mucilaginous clysters of the same nature may likewise be injected.

In addition to these means, flannel cloths wrung out in a warm decoction of poppy-heads slightly bruised, with an addition of about one-fourth of spiritus camphoræ, may be applied to the

region of the stomach, taking care to renew them as often as they become cold. Warmth should likewise be applied to the extremities by means of bottles filled with hot water.

As soon as the stomach is sufficiently cleansed by the diluents just recommended, we should endeavour to allay or put a stop to the irritation, by administering opium in sufficiently large doses, but, at the same time, in as small a bulk as possible. It may be given in the quantity of a grain or a grain and a half with four or five grains of the submuriate of mercury in the form of a pill, and be repeated every two hours, as long as the urgency of the case may require: if the pill is rejected, about forty drops of *tinctura opii* may be added to a small saline draught, swallowed in the act of effervescence; and this may be repeated as frequently as the former. In some instances, where the spasms have been so violent as quickly to induce an alarming state of debility, I have known the quantity of opium to have been increased to eight or ten grains in each dose.

After the administration of opium in the manner advised, it will be proper to immerse the patient as soon as possible in a warm bath, as this will be a likely means of checking the inordinate secretion of bile by restoring the circulation to the surface of the body, and of course relieving the orgasm of the chylo-poetic viscera.

In the advanced stage of the disease, where the pulse is weak, and the extremities are cold, opiates joined with aromatics, as in the *confectio opii*, and musk in large doses, may be employed with advantage.

Opium, when given by the mouth, even in the smallest possible bulk, is frequently rejected by vomiting in cholera morbus; but if given in an enema, will often in a very short space of time completely remove all the urgent symptoms, and transfer the patient from a state of torture to one of ease. Clysters of this nature, containing about a drachm of *tinctura opii* in each, ought therefore to be injected from time to time as long as the irritation at the stomach continues.

Two writers on the diseases of India* mention, that a very severe and fatal spasmodic cholera, proceeding from acrid bile in the *primæ viæ*, is a very prevalent disease on the coast of Malabar, where it is known by the name of *mort de chien*, from its fatality. In this species of the disease, opium in the form of injection has succeeded when all medicines by the mouth have been ineffectual in allaying the orgasm of the stomach and intestines.

A cataplasm of opium and camphor applied to the region of the stomach will sometimes revert its retrograde motions. In several cases where there prevailed great pain and irritation at the stomach, and where the patient could retain nothing on it, I have

* See Mr. Curtis's Treatise on Indian Diseases. Essay on the Influence of Tropical Climates, by J. Johnson, M. D.

experienced the best effects from the external application of opium to the epigastric region, in the form of an embrocation*. Indeed, no substantial reason can be assigned why it may not be introduced into the system by friction, as mentioned under the head of Colica Pictonum, as well as mercury, camphor, rectified spirit, &c.

The application of a blister to the stomach will sometimes put a stop to the vomiting, by stimulating the skin and, by sympathy, affecting the stomach. In very severe cases of cholera in this, as well as in warm climates, it might probably be advisable to resort to the external application of nitric acid as a counter-irritant, for a considerable time must elapse before the Spanish fly commences its irritation: which practice has been adopted in that aggravated form of the disease which has lately been developed in Hindostan.—See the succeeding pages.

I have been informed by a medical friend who practised many years in the West Indies, where cholera is of frequent occurrence, as has before been observed, that he found large doses of acidum sulphuricum dilutum to abate the irritation of the stomach more readily than even opium.

Some cases of this disease which had resisted the power of opium, have indeed been successfully treated with diluted nitric acid in small doses, combined with an infusion of calumba or cascarrilla. Its valuable effect in allaying the irritation at the stomach I have myself witnessed of late in two or three instances.

As soon as a sedative effect is produced on the stomach and intestines, and the violence of the attack has somewhat subsided, a mild laxative will assist the calomel in carrying off any diseased secretions. The aperient draught prescribed below† may be taken for this purpose.

Although we may have been so fortunate as to procure a remission of the symptoms, still, as the spasms have a great tendency in this disease to recur after the operation of the opium is over, it will by all means be advisable to continue its use for several days in such a manner as to keep up a constant effect.

In ordinary cases, where the evacuations are moderate, astringents would be improper, as they might aggravate the complaint by retaining the vitiated bile in the intestines, which ought to be discharged as long as the morbid secretion from the liver continues.

* 1. R Spirit. Camphoræ, f. ʒss.

Tinct. Opii, f. ʒi. M.

ft. Embrocatio, supra ventriculi regionem
sæpe infricanda.

† 2. R Magnes. Sulphat. ʒij.

Infus. Rosæ Compos. f. 3x.

Syrup. Croci, f. ʒj. M.

ft. Haustus, quartis horis repetendus, si erit
necessitas.

* 1. Take Camphorated Spirit, half an ounce.
Tincture of Opium, one ounce.

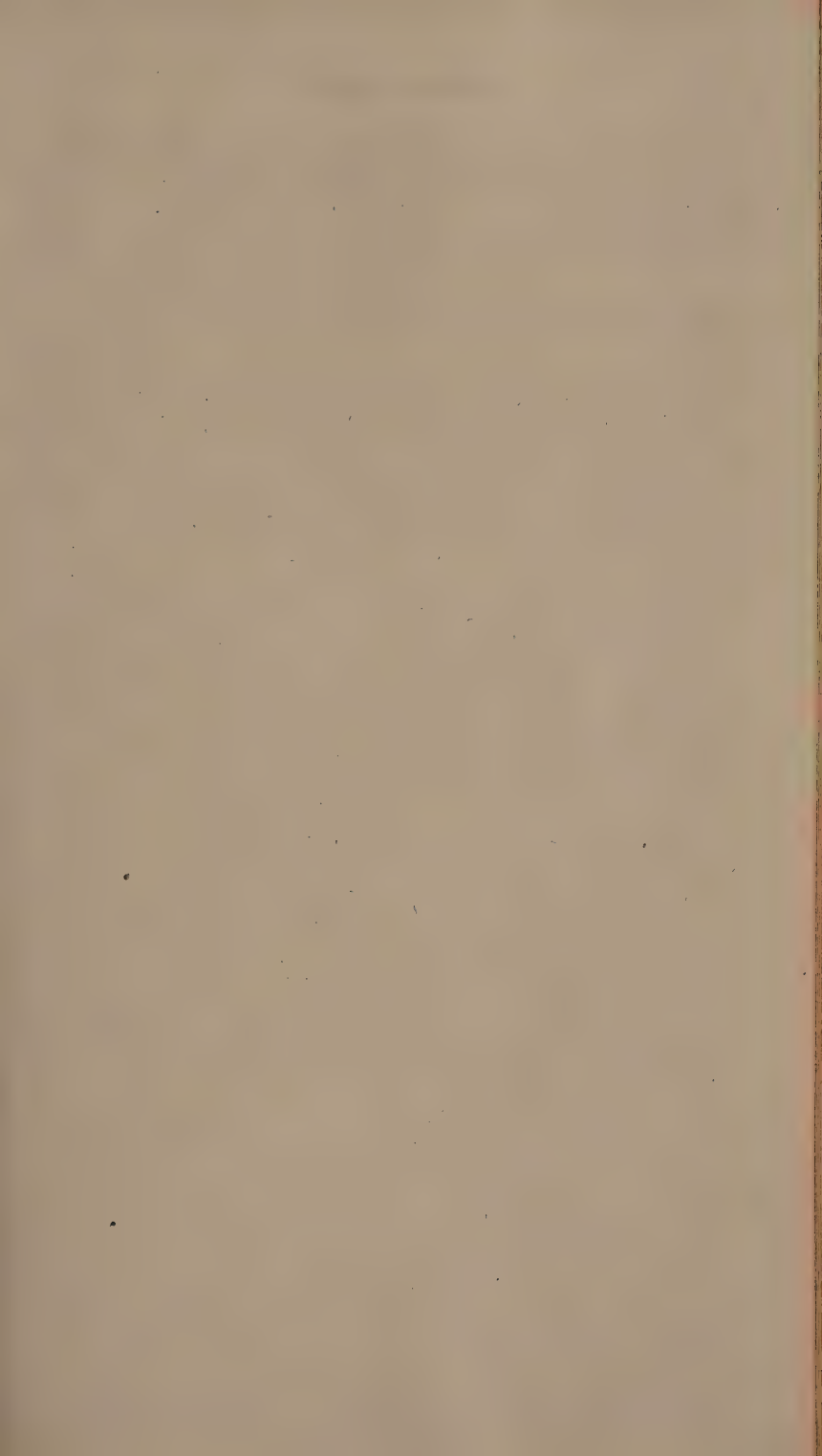
Mix them, and rub a little of the embrocation frequently over the region of the stomach.

† 2. Take Sulphate of Magnesia, two drachms.

Compound Infusion of Roses,
ten drachms.

Syrup of Saffron, one drachm.

Mix them, and let the draught be repeated every four hours, as long as may be necessary.



As the debility induced by the disease greatly favours the disposition to spasmodic affections, it may be proper at the same time that we use opiates to employ tonics, as wine, cinchona, and chalybeates (see Dyspepsia), in order to restore the tone of the stomach; taking care at the same time to obviate costiveness by some gentle laxative, such as rhubarb.

As strengtheners of the stomach and intestines, calumba root and cascarilla bark will be found useful medicines, and may therefore be given*.

On recovery, the patient should pay particular attention to his diet, carefully abstaining from all things which might promote a return of the disease, and using only such as are light and nutritive, and which do not readily become aced. He is likewise to pay a minute attention at the same time to the functions of the skin by flannel or other warm clothing, while the night air and sudden alterations of temperature are to be cautiously guarded against.

There are some people who are subject to periodical attacks of cholera, returning by intervals of a few weeks, producing for two or three days sickness and vomiting, increased heat of the skin, and quickness of the pulse, white tongue, and thirst. Sometimes, however, the bowels are torpid. Heaviness of the eyes and great disposition to drowsiness are commonly the precursors to the attack; and if a dose of hydrargyri submuriæ joined with some gentle purgative be then given, it will either considerably lessen its violence, or altogether prevent it.

Exercise, particularly on horseback, tonics, and the Bath or Cheltenham waters, are well calculated to afford relief and prevent recurrences of the complaint in all such cases.

It has already been mentioned, that a very severe cholera morbus is a prevalent disease on the coast of Malabar; but towards the close of the year 1817 and the year 1818, this disorder prevailed epidemically throughout Hindostan and the peninsula of India, and several thousands of the natives, both Mussulmans and Hindoos, as also Europeans, fell a sacrifice to it. Almost every corps in the army was attacked with it. It raged with dreadful

* 3. R Infus. Cascarillæ, f. ℥jss.

Tinct. Calumb. f. ℥ij.

— Card. C. f. ℥j. M.

ft. Haustus, ter die sumendus.

Vel,

4. R Pulv. Calumb. gr. x.

— Zingib.

Ferri Subcarbonat. aa gr. v.

Syrup. Rosæ, q. s. M.

ft. Bolus, bis quotidie capiendus.

* 3. Take Infusion of Cascarilla, one ounce and a half.

Tincture of Calumba, three drachms.

Compound Tincture of Cardamoms, one drachm.

Mix them, and let this draught be taken three times a day.

Or,

4. Take Powder of Calumba, ten grains.

— Ginger.

Subcarbonate of Iron, of each five grains.

Syrup of Roses, a sufficiency to form a bolus, which is to be taken twice every day.

fatality in Calcutta, and from January 1818 to the succeeding May, the deaths in that city seldom fell short of two hundred each week.

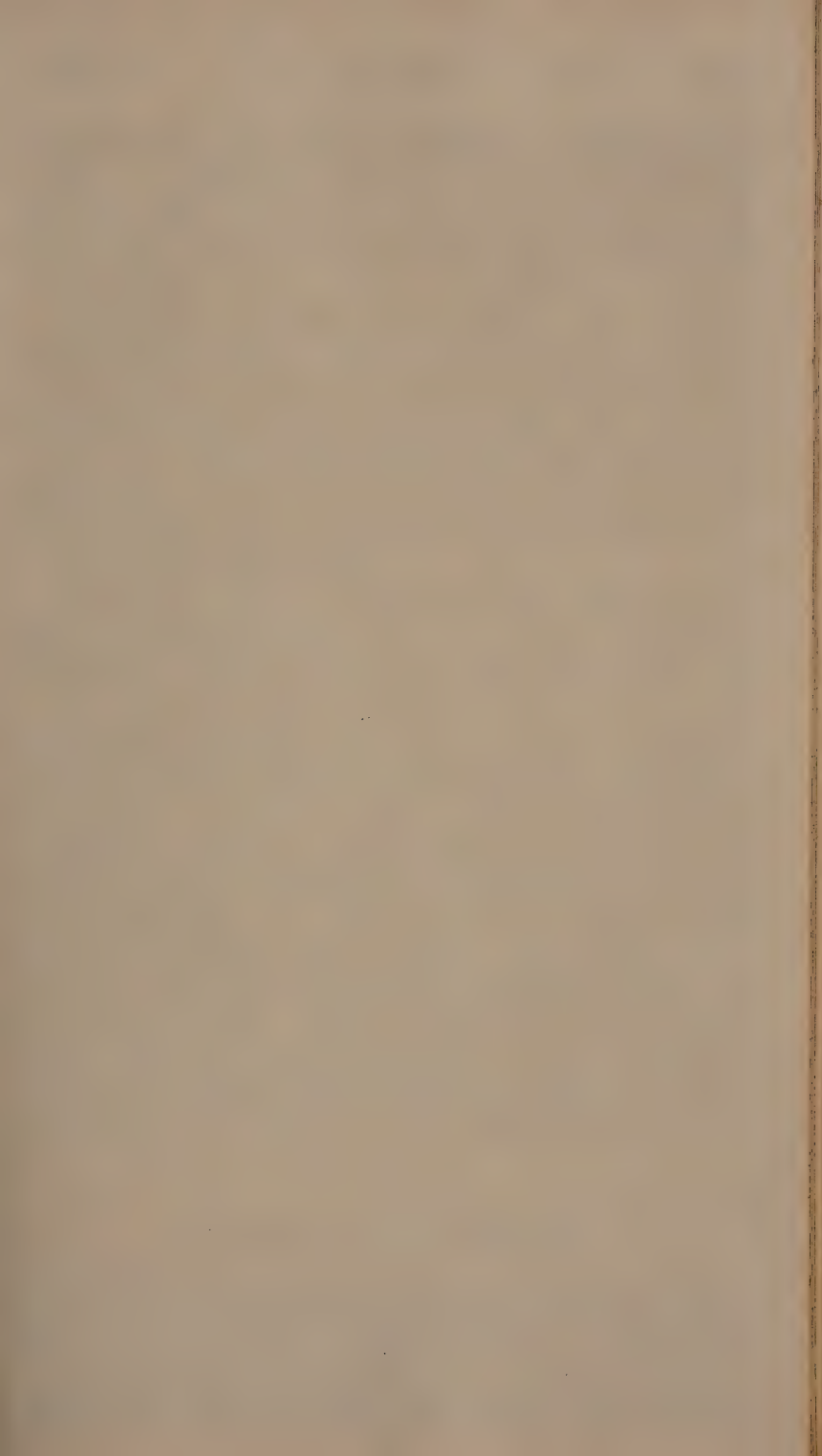
The practitioners in India admit, that no marked peculiarity in the weather was observed previous to the appearance of this disease in Bengal; and it does not seem to have been at all affected in its severity or progress by the circumstances of season, temperature, or moisture. It was observed to prevail with equal violence when the thermometer was at 40° or 50° , as when it stood at 90° or 100° , during the prevalence of incessant rains for months, and when the face of the earth was scorched up by long-continued heat and drought.

It appears from the reports given in by the practitioners who were commissioned, on the occasion, to scrutinize into the nature of the disease and its treatment, that the principal curative means resorted to were bleeding, calomel, opium, and other antispasmodics. By most, bleeding at the onset was considered as indispensable. It was found, that whilst the blood was flowing from the arm, the most distressing symptoms were frequently relieved; the vomiting generally ceased; the burning sensation at the stomach abated; and the pains and spasms in the abdomen relaxed in severity; and it was always perceived, that the pulse invariably rose while the blood flowed from the arm. Bleeding was however found more necessary in Europeans than in the natives.

Calomel was given in doses of fifteen grains, or a scruple combined with two grains of solid opium, or followed by sixty or one hundred and twenty drops of tinctura opii.—The effect in general was speedy, and its sedative power in this large dose was admitted by all. If the first dose was immediately rejected, it was again repeated and continued without any regard to quantity, according to the urgency of the symptoms. In conjunction with these remedies, cordials and antispasmodics, such as peppermint, æther, the spiritus ammoniæ aromaticus, and other diffusible stimuli, were found the most useful adjuncts; but the whole hopes of success rested on bleeding at the onset of the disease, calomel, and opium.

When these remedies were employed early and conjointly, it is reported that the success was almost in every instance nearly certain. The patient generally fell asleep, and awoke free from the most painful symptoms, or was greatly relieved; and when bile appeared in the alvine evacuations instead of the watery or clayey matter which was the usual attendant, it was a sure sign that the remedies were effective, and amendment taking place. After these effects were obtained, it was necessary to give a mild laxative, and the carbonate of magnesia was generally found to answer the purpose.

It has been mentioned in a preceding page, that the external application of nitric acid had been employed by one of our surgeons in the East Indies, as a counter-irritant in that aggravated



form of cholera morbus which has lately been developed in Hindostan. The rapidity with which it rushes to a fatal termination, and the necessity which exists to administer remedies without the least delay, for the purpose of arresting its progress, led to this practice: because he well knew that much time might elapse before the Spanish fly commences its irritation, thereby permitting the disease to acquire invincible strength.

A good way of employing the acid in severe cases of cholera; (and perhaps it might be beneficial also in cases of a translation of gout or rheumatism from the extremities to the head, heart, or stomach, endangering life,) is to brush the acid slightly diluted in water with a feather over the space of two palms of the epigastric region, neutralizing in some measure the severe effects of the acid, by applying quickly afterwards some alkaline preparation, or by rubbing the parts with a soft rag soaked in cold water, so as to dilute whatever portion of acid that might remain, after it has effected its immediate irritation.

The remedy in question should be employed only in cases of great urgency; for the great irritation which it produces and protracts through the healing process, and the longer period which this process requires, will prevent the employment of it as an external application in common cases.

From the report given in, it appears that the disease was not considered by the majority of practitioners in India as contagious, although judged by some to have such an influence. The proximate or exciting cause of the epidemic was obscure. Rapid atmospheric vicissitudes, in regard to temperature or moisture; exposure of the body to currents of cold air, particularly the chill of the evening, after being heated by violent exercise of any kind, inducing exhaustion or debility; low marshy situations; insufficient clothing; flatulent and indigestible food, especially crude and watery vegetables, which compose a large proportion of the diet of the natives, and particularly that gradual undermining of the constitution which arises in a condensed, dirty, and ill-fed mass of population,—are all unquestionably powerful predisposing causes, and although not absolutely necessary to the production of the disease, might, when present, offer a more unlimited range to the operation of the original cause, whatever it may have been.

DIARRHŒA, OR LOOSENESS.

DIARRHŒA consists in frequent and copious discharges of feculent matter by stool, accompanied by griping, and often at first with a slight degree of vomiting, but unattended either by inflammation, fever, or contagion. The presence of these, with tenesmus and an evacuation of blood and purulent mucus with hardened balls or scybala, instead of natural fæces, which prevail in dysentery, will

always enable the practitioner readily to discern the two diseases from each other. It is to be distinguished from cholera morbus by the discharges not being very bilious, and also by there being no vomiting of bile.

In diarrhœa there is evidently a morbid increase of the peristaltic motion; which morbid increase is the effect of a variety of causes applied either to the body in general, or acting solely on the parts affected.

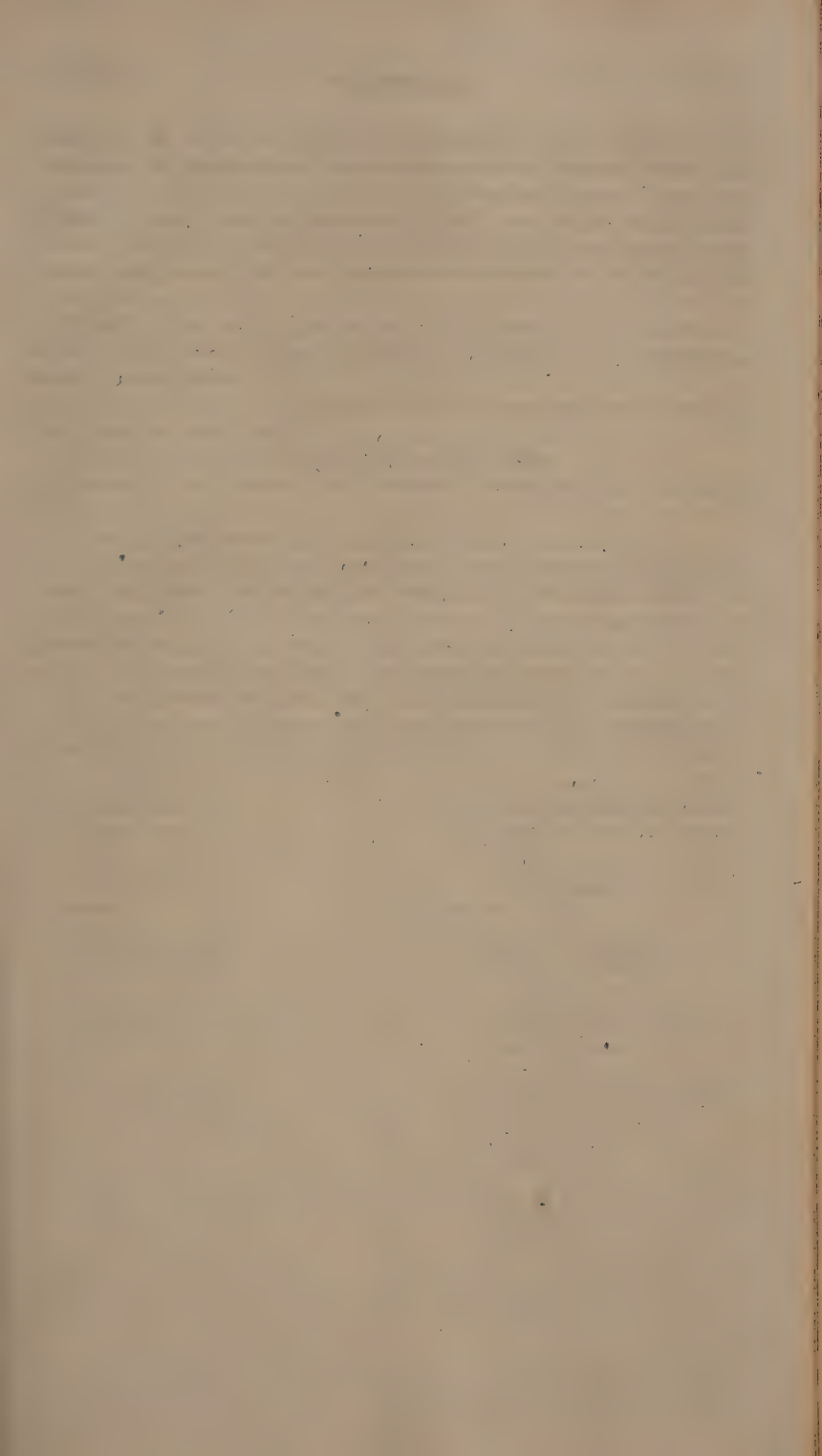
Of the former may be noticed the application of cold to the surface of the body, so as to give a check to perspiration, and thereby determine the flow of blood more to the interior parts; as likewise passions of the mind, and certain diseases, as dentition, retrocedent gout and rheumatism, fever, &c.

Of the latter, may be enumerated, first, matters taken into the stomach, and acting either from their quantity, as in the case of overcharging the organ, or from their nature, on the state of the stomach itself, producing fermentation, as acid fruits, as also oily and putrid substances, and purgative medicines: secondly, matters generated in the body and thrown into the intestines, acrid bile, pancreatic juice, purulent matter, water in dropsy, worms, &c.: thirdly, mucous matter poured from the mucous follicles of the intestines themselves, in consequence of an increased excretion, and producing what is known by the name of diarrhœa mucosa.

In diarrhœa, each discharge is usually preceded by a murmuring noise and flatulence in the intestines, together with a sense of weight and uneasiness in the lower part of the belly; which cease on the discharge taking place, but are again renewed before the one which is to succeed ensues. The appearance of the stools is various. Sometimes they are thinner than natural, from the admixture of a larger quantity of fluid poured out by the exhalants of the intestines than common. Sometimes they are slimy, and sometimes they are green, when first discharged; sometimes they are evacuated of a yellow colour, but become green on exposure to the air; and now and then they are of a dark brown colour, and very fetid. As the disease advances the stomach becomes affected, and sickness, nausea, and vomiting occasionally prevail; the countenance turns pale, and the skin is dry and rigid. If it continues for any length of time, universal emaciation, dropsy of the lower extremities, and relaxation of every part ensue, together with a great loss of strength.

In forming our prognostic in this disease, we are to be determined by the particular cause from which it arises; whether symptomatic of another disorder, and whether of a critical nature; as likewise by the degree of debility present in the system, and the length of time it has continued. Where it attacks pregnant women, it is generally to be considered as attended with danger.

Dissections of diarrhœa which have terminated fatally, have shewn, that where it prevailed as a primary disease, ulceration of



some portion of the intestines is the morbid change most usually met with; in which cases the inner membrane is often abraded for a considerable extent, and its muscular coat laid bare. They have likewise shewn that the follicular glands are the most frequent seat of such ulcerations, and that they now and then become cancerous, and assume the same appearance as scirrhus and cancer in other parts.

When it has been symptomatic, the morbid changes of the organ belong to the primary diseases, of which the diarrhœa is merely a symptom.

In the treatment of diarrhœa it will be necessary to attend to the following indications:—

First, To obviate or remove the morbid cause.

Secondly, To suspend the increased action which constitutes the disease: and,

Thirdly, To restore the impaired tone of the parts.

Vomits not only cleanse the stomach, but promote all the secretions; and therefore when diarrhœa has arisen from excess or repletion, or from crude and acrid matter in the stomach, the first indication may be answered by giving a gentle emetic in the evening, and some aperient* the succeeding morning.

If it has proceeded from obstructed perspiration, in consequence of exposure to cold, we must then endeavour to restore this by nauseating doses of ipecacuanha†, or of some antimonial prepara-

- * 1. R Pulv. Rhei, ʒj.
Aq. Cinnam. f. ʒiss.
Spir. Lav. C. f. 3ss. M.

ft. Haustus.

Vel,

2. R Aq. Anethi, f. ʒvi.
Tinct. Rhei, f. ʒss.

Cretæ Preparat. ʒj.
Syrup. Zingib. f. ʒj. M.

ft. Haustus.

Vel,

3. R Pulv. Rhei, ʒj.
—— Cinnam. Comp. gr. v.

Syrup. Zingib. q. s. M.

ft. Bolus.

Vel,

4. R Magnesiae Subcarb. 3ss.

Pulv. Rhei, ʒj.
—— Zingib. gr. x. M.

ft. Pulvis.

- † 5. R Pulv. Ipecac. Comp. gr. iij.

—— Cinnam. Comp. gr. v.

Confect. Rosæ, q. s. M.

ft. Bolus, quartis horis sumendus.

- * 1. Take Powder of Rhubarb, one scruple.
Cinnamon Water, one ounce and a half.
Compound Spirit of Lavender, half a drachm.

Mix them for a draught.

Or,

2. Take Dill Water, six drachms.
Tincture of Rhubarb, half an ounce.
Prepared Chalk, one scruple.
Syrup of Ginger, one drachm.

This is to be taken as a draught.

Or,

3. Take Powder of Rhubarb, one scruple.
Compound Powder of Cinnamon, five grains.
Syrup of Ginger, a sufficiency to form a bolus.

Or,

4. Take Subcarbonate of Magnesia, half a drachm.
Powdered Rhubarb, one scruple.
—— Ginger, ten grains.

Mix them.

- † 5. Take Compound Powder of Ipecacuanha, three grains.

—— Cinnamon, five grains.

Confection of Roses, a sufficiency to form a bolus, which is to be taken every four hours.

tion, as the pulvis antimonialis, pulvis Jacobi verus, or a solution of the antimonium tartarizatum, which may be repeated every two or three hours in the manner which has been advised under the head of Simple Fever. At night the patient may immerse his feet in warm water.

An irritable state of the bowels, with long-continued diarrhœa, and which had resisted the ordinary means of cure, has been ultimately overcome by the assistance of a warm or vapour bath. This, by exciting the action of the cutaneous arteries of the whole system, and determining a greater flow of blood to the surface of the body, ending in secretion, has relieved the irritable state of the intestines and removed the disease.

Along with these remedies we may recommend a free use of diluents and demulcents, such as a decoction of barley, rice, marshmallows, quince, or calcined hartshorn, mutton suet dissolved in milk, the emulsion of gum. acaciæ, linseed-tea, or toast and water; which will serve both to wash out the offending matter, and to guard the intestines against its further action.

Where a septic fermentation is conspicuous (as in the case of scurvy and other putrid diseases), we must employ acids, such as ripe fruits, or the acidum sulphuricum in a diluted state.

When diarrhœa seems to arise or be kept up by a septic acid generated in the intestinal canal, and known by frequent eructations of air, diffusing a hot and disagreeable sensation upon the fauces and mouth, griping pains in the bowels, with dejections of a white chalky appearance, which in passing off occasion a hot smarting sensation at the end of the rectum, it will be necessary to have recourse to absorbents* joined with opiates. Alkalies

- * 6. R Mistur. Cretæ, f. ℥iv.
Spirit. Cinnam. f. ℥j.
Liquor. Ammon. Subcarbonat. f. 3j.

Tinct. Opii, m xxiv.

ft. Mistura, ejus sumat æger cochl. ampla ij.
pro re nata.

Vel,

7. R Misturæ Corn. Usti, Oj. in die pro
potu ordinario.

Vel,

8. R Ammonix Subcarbonat. gr. x.

Aq. Menth. Pip. f. ℥jss.

Tinct. Opii, m x.

Syr. Rosæ, f. 3j. M.

ft. Haustus, bis in die adhibendus.

Vel,

9. R Magnesix, ℥ij.

Pulv. Rhei, gr. viij.

— Cinnam. Comp. gr. x. M.

- * 6. Take Chalk Mixture, four ounces.

Spirit of Cinnamon, one ounce.

Solution of Subcarbonate of Ammonia, one drachm.

Tincture of Opium, forty drops.

Of this mixture let the patient take two large
spoonsful occasionally.

Or,

7. Take Mixture of Burnt Hartshorn, one
pint in the course of the day, as
ordinary drink.

Or,

8. Take Subcarbonate of Ammonia, ten
grains.

Peppermint Water, one ounce
and a half.

Tincture of Opium, fifteen drops.

Syrup of Roses, one drachm.

Mix them, and let this draught be taken
twice a day.

Or,

9. Take Magnesia, two scruples.

Powder of Rhubarb, eight grains.

Compound Powder of Cinnamon,
ten grains.

will also be a useful class of medicines, and therefore we may advise frequent doses of the subcarbonate of potass dissolved in a little veal broth throughout the course of the day, and at night an anodyne.

In most cases of diarrhœa strong purgatives are found to prove injurious; but where it arises from an acrimony which is extremely tenacious, and that adheres closely to the internal surface of the intestines, or is retained in their folds, those of a mild nature are the only remedies that can remove the disease, and ought therefore in such a case to be employed. The neutral salts will be proper purgatives on this occasion, particularly the magnesiæ sulphas, sodæ sulphas, and soda phosphorata.

Should diarrhœa proceed from acrid or poisonous substances taken into the stomach, the patient must drink plentifully of diluting liquors, with fat broths, to promote a vomiting; and to carry the remainder downwards a purge of the oleum ricini may immediately afterwards be administered. To remove the irritation, small doses of tinctura opii may be taken after the purge operates.

When gout, repelled from the extremities, falls on the intestines and occasions a diarrhœa, it must again be solicited towards the extremities by warm fomentations, cataplasms, or blisters. The perspiration is at the same time to be promoted by drinking plentifully of wine whey. If these means fail, a gentle dose of some stomachic purgative, such as the tinctura rhei compos. may be given; after which the absorbent mixture just recommended may be used in frequently-repeated doses, with an addition of ten or twelve drops of tinctura opii to each.

Should diarrhœa be occasioned by worms, which may be known from the sliminess of the stools, mixed with pieces of the decayed worms, medicines must be given to destroy and carry off these vermin, as advised under that particular head.

When it proceeds from a use of unwholesome water, and the situation of the person will not admit of its being changed, the addition of a small quantity of quicklime, chalk, or the like, possibly may correct this effect.

The diarrhœa which attends on dentition should never be checked, unless it prevails in so high a degree as to prove hurtful to the child; in which case four or five grains of toasted rhubarb, with about eight or ten of prepared chalk or magnesia, may be given. This, if repeated three or four times, will generally correct

ft. Pulvis, mane vespereque sumendus.

Vel,

10. R. Pulv. Cretæ C. cum Opio, gr. xv.

Confect. Rosæ, q. s.

ft. Bolus, bis in die capiendus.

Mix them, and take this powder night and morning.

Or,

10. Take Compound Powder of Chalk with Opium, fifteen grains.

Confection of Roses, a sufficiency to form a bolus, which may be taken twice a day.

the acidity, and put a stop to the griping stools. If it fails, we may make trial of the mixture advised below*.

Should purgings return frequently during the time of teething, or upon the striking in of some eruption on the skin, it will be very useful to procure a small discharge behind the ears, or to apply a plaster of *pix abietina* to the back. For the former purpose, some finely-powdered Spanish flies may be rubbed on the part till a proper excoriation is produced; or we may draw a bit of narrow tape through a piece of the *emplastrum cantharidis*, and lay it close behind the ears.

A diarrhœa that is likely to prove critical or salutary, is by no means to be rashly stopped; but when it attacks pregnant women, the most powerful remedies ought immediately to be employed.

To answer the second indication in the cure of diarrhœa, viz. that of suspending the increased action which constitutes the disease, it will be proper to have recourse to opiates, which may either be given separately, in small and repeated doses, so as to keep up a constant effect, or be combined with whatever other medicines† we administer.

The third indication is to be effected by a use of astringents, joined with aromatics and tonics. These remedies are especially adapted to those cases where the irritability of the intestines depends upon a loss of tone, and which may occur, either from debility of the whole system, or from causes acting on the intestines alone.

The astringents in most general use are, alum, logwood, catechu, and gum kino, which may be administered in any of the forms advised below‡. In habitual and long-protracted diarrhœa,

* 11. R Pulv. Rhei, gr. xv.

Magnes. Subcarbonat. 3ss.

Aq. Anethi, f. ʒiij.

Spirit. Ammon. Aromat. ℥ xvi.

Tinct. Opii, ℥ xiiij. M.

fi. Mistura, cujus sumantur cochl. ij. vel iij. minima bis terve in die, vel ut opus sit.

† 12. R Confect. Opii, gr. xv.

Aq. Cinnam.

— Pimentæ, āā f. ʒvj.

Tinct. Kino, f. ʒj.

— Lav. C. f. 3ss. M.

fi. Haustus, 4ta vel 6ta quaq. hora sumendus.

‡ 13. R Aluminis Pulv.

Catechu Extract. āā gr. x.

* 11. Take Powdered Rhubarb, fifteen grains.

Subcarbonate of Magnesia, half a drachm.

Dill Water, three ounces.

Aromatic Spirit of Ammonia, twenty-four drops.

Tincture of Opium, twenty drops.

Of this mixture, two or three tea-spoonsful are to be taken twice or thrice daily, as may be judged necessary.

† 12. Take Confection of Opium, fifteen grains.

Cinnamon Water.

Pimento Water, of each six drachms.

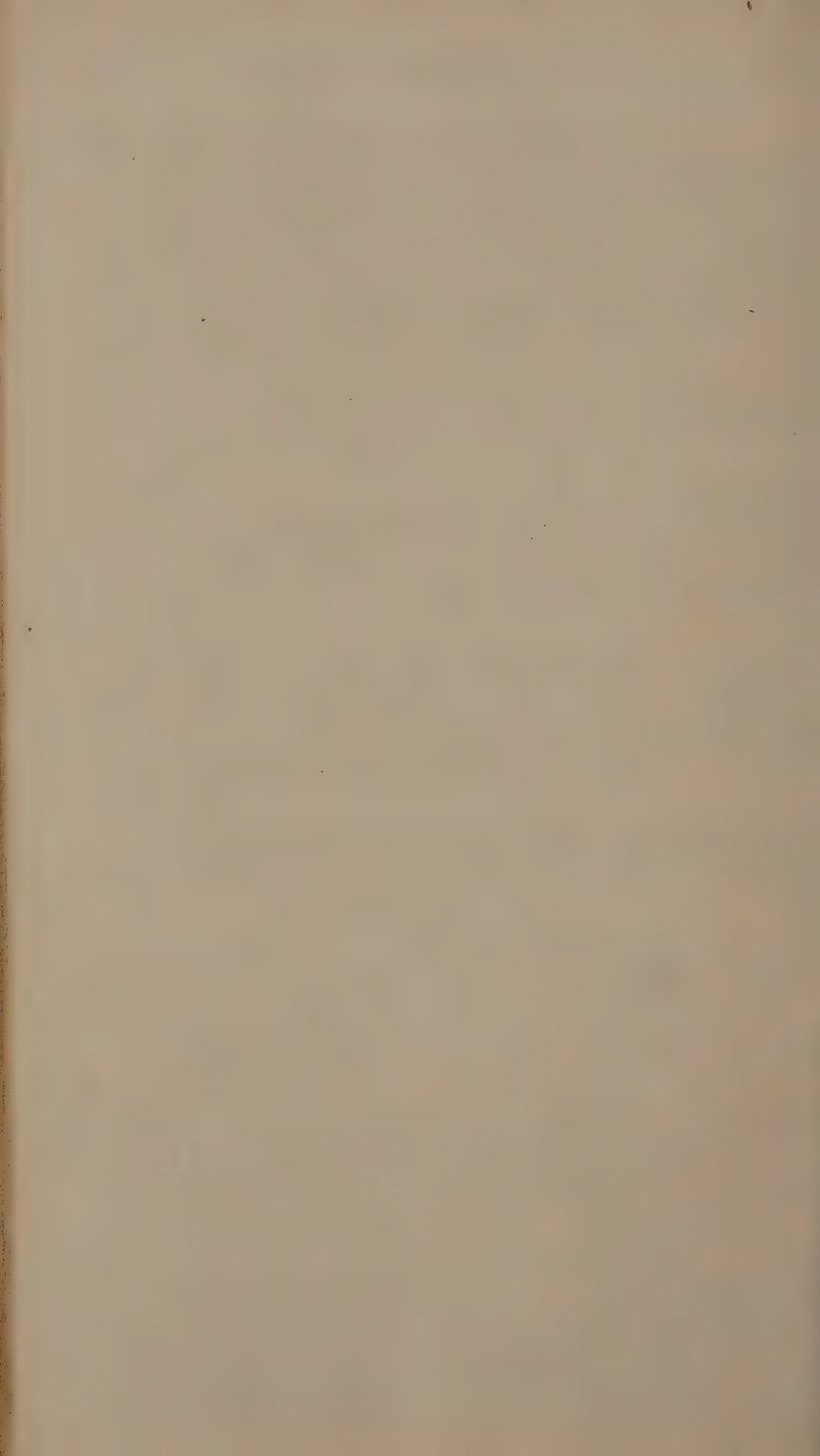
Tincture of Kino, one drachm.

Compound Tincture of Lavender, half a drachm.

This draught may be taken every fourth or sixth hour.

‡ 13. Take Powdered Alum,

Catechu, of each ten grains.



some patients have derived much benefit from drinking about a pint of lime-water a day, mixed with an equal quantity of milk, in which an ounce of gum. acaciæ has been dissolved.

The tonics which are most likely to prove useful are, the cinchona, cusparia, simarouba, quassia, and cascarilla barks, calumba-root, preparations of iron, and chalybeate waters, together with a proper quantity of Port wine taken daily. Where this becomes acid on the stomach, Madeira, sherry, or weak brandy and water, may be substituted. The above medicines may be administered as here recommended*, or as prescribed under the head of Dyspepsia.

Opii, gr. ss.

Confect. Ros. q. s. M.

ft. Bolus, ter quaterve die capiendus.

Vel,

14. R Misturæ Cretæ, f. ʒv.

Extract. Hæmatoxyli, ʒss.

Aq. Pimentæ, f. ʒij.

Tinct. Kino, f. ʒj.

Syr. Zingib. f. ʒij. M.

ft. Mistura, cochl. ij. magna ter quaterve in die adhibenda.

Vel,

15. R Confect. Aromat. ʒj.

Aq. Cinnam. f. ʒij.

— Fontan. f. ʒiv.

Tinct. Catechu, f. ʒij.

— Opii, ʒ xxxiv. M.

ft. Mistura.

* 16. R Cort. Cascaril. Contus.

— Simaroub. C. āā ʒij.

Coq. ex Aq. Fontan. Oj. ad
f. ʒviiij. Colat. adde

Spirit. Cinnam. f. ʒj.

Tinct. Kino, f. ʒij. M.

ft. Mistura, cujus sumat cochl. magna iij. ter quaterve in die.

Vel,

17. R Infus. Cort. Cuspariæ, f. ʒvj.

Tinct. Calumb. f. ʒj.

— Catechu, f. ʒij.

Spirit. Pimentæ, f. ʒss. M.

ft. Mistura.

Vel,

18. R Cort. Granat. Contus. ʒij.

Rad. Simaroub. C. ʒss.

Aq. Ferventis, f. ʒxvj. macera per
horas duas, et colaturæ adde

Confect. Aromat. ʒj.

Opium, half a grain.

Confection of Roses, a sufficiency
to form a bolus, which is to be taken three
or four times a day.

Or,

14. Take Chalk Mixture, five ounces.

Extract of Logwood, half a
drachm.

Pimenta Water, two ounces.

Tincture of Kino, one drachm.

Syrup of Ginger, two drachms.

Of this mixture, the dose may be two large
spoonsful three or four times a day.

Or,

15. Take Aromatic Confection, one drachm.

Cinnamon Water, two ounces.

Pure Water, four ounces.

Tincture of Catechu, two
drachms.

— Opii, fifty drops.

The dose of this mixture to be the same as
the former.

* 16. Take Cascarilla Bark, bruised,

Simarouba Bark, bruised, of each
two drachms.

Pure Water, one pint. Boil
them slowly until reduced to
eight ounces, strain off the
liquor, and add

Spirit of Cinnamon, one ounce.

Tincture of Kino, two drachms.

Of this mixture, let three large spoonsful be
taken three or four times every day.

Or,

17. Take Infusion of Cusparia Bark, six
ounces.

Tincture of Calumba, one ounce.

— Catechu, two drachms.

Spirit of Pimenta, half an ounce.

Mix them.

Or,

18. Take Pomegranate Bark, bruised, two
drachms.

Simarouba Bark, bruised, half an
ounce.

Boiling Water, sixteen ounces.

Let them infuse for two hours, strain off the
liquor, and add to it

Aromatic Confection, one drachm

From whatever cause a diarrhœa proceeds, whenever it is found necessary to check it, the diet ought to consist of rice boiled with milk, and flavoured with cinnamon, together with preparations of sago or Indian arrow-root, and the lighter sorts of meats roasted, as veal, lamb, or chickens. Weak brandy and water, or diluted wine, may be substituted for malt liquor as common drink.

Those who are liable to frequent returns of this disease, either from a peculiar weakness, or too great an irritability of the bowels, should live temperately, avoiding crude summer fruits, most kinds of vegetables, all unwholesome food, and meats of hard digestion. They ought likewise to beware of cold, moisture, or whatever may obstruct the perspiration; and they should wear flannel next to the skin.

DIABETES.

WEARINESS and disinclination to motion or exertion, with the feelings of weakness, dryness and harshness of the skin, costiveness, great thirst, a voracious appetite, accompanied by an apparent defect in the process of chylication, gradual emaciation of the whole body, and a frequent discharge of urine, containing a large proportion of saccharine and other matter, which is generally voided in a quantity far exceeding that of the aliment or fluid introduced, are the characteristics of this disease. It has been usual to apply different names to it, as the diabetes mellitus, wherein the urine is of a fragrant smell, and of the colour and taste of honey, and the diabetes insipidus, with limpid urine, not sweet; but some have considered this division as more fanciful than real, and more systematic than useful.

Those of a shattered constitution, and those who are in the decline of life, are most subject to its attacks. The few cases which have occurred to me in practice, all arose in persons who had addicted themselves to spirituous liquors, and who at the same time fared hard, and were much exposed to cold. It not unfrequently attends on hysteria, hypochondriasis, dyspepsia, and

Tinct. Card. Comp. f. ʒj. M.

ft. Mistura, ejus sumantur cochlearia larga tria ter quaterve in die.

Vel,

19. R Decoct. Cinchonæ, f. ʒjss.

Tinct. ejusd. C. f. ʒij.

— Kino, f. ʒj.

— Opii, ʒij. M.

ft. Haustus. 4tis aut 6tis horis sumendus.

Compound Tincture of Cardamoms,
one ounce.

Of this mixture, three large spoonfuls are to be taken three or four times a day.

Or,

19. Take Decoction of Peruvian Bark,
one ounce and a half.

Compound Tincture of the same,
two drachms.

Tincture of Kino, one drachm.

— Opium, ten drops.

Mix them for a draught, to be taken every four or six hours.

asthma; but it is always much milder when symptomatic, than when it appears as a primary affection.

Diabetes may be occasioned by a use of strong diuretic medicines, intemperance of life, and hard drinking, excess in venery, severe evacuations, immoderate use of acid drinks, excessive labour joined to a poor vapid diet, and the depressing passions, or by any thing that tends to produce an impoverished state of the blood, or general debility. Some individuals have an hereditary disposition to the disease, as has been noticed in a communication from Dr. Storer to Dr. Rollo. In some cases it has arisen from an exposure to cold and suppressed perspiration. It has, however, taken place, in many instances, without any obvious cause.

That which immediately gives rise to the disease has ever been considered as obscure, and various theories have been advanced on the occasion. It has been usual to consider diabetes as the effect of relaxation of the kidneys, or as depending on a general colligation of the fluids. Dr. Richter, professor of medicine in the university of Gottingen, supposes the disease to be generally of a spasmodic nature, occasioned by a stimulus acting on the kidneys; hence a *secretio aucta urinæ*, and sometimes *perversa*, is the consequence. Dr. Darwin thinks, that in diabetes there is another passage from the intestines to the bladder, besides that of the sanguiferous system, through the kidneys, and supposes it is effected by the retrograde motions of the urinary branch of the lymphatic system; which doctrine, although it did not escape the censure of the best anatomists and experimental physiologists, met nevertheless with a very favourable reception on its being first announced. The late Dr. Cullen offered it as his opinion, that the proximate cause of this disease might be some fault in the assimilatory powers, or in those employed in converting alimentary matters into the proper animal fluids; which theory has since been adopted by Dr. Dobson, and still later by Dr. Rollo, surgeon-general to the royal artillery. The liver has been thought by some to be the chief source of the disease; but diabetes is seldom attended with any affection of this organ, as has been proved by frequent dissections, and when observed, it is to be considered as accidental.

My own opinion as to the cause of diabetes mellitus is, that it consists in a perverted or diseased action of the kidneys, and that it is by virtue of this action that the saccharine matter in the urine is produced.

The primary seat of the disease is far from being absolutely determined in favour of any hypothesis yet advanced; but from an attentive consideration of all the circumstances, the weight of evidence appears to induce the majority of practitioners to consider diabetes as depending on a primary affection of the kidneys.

The morbid state in which these organs are usually found on dissection, certainly strengthens the opinion that they are the

primary seat of the disease. From the peculiar matter which is elaborated by the kidneys being secreted in twice its usual quantity, we are at least induced to conclude that their action is very considerably increased. It must, however, be acknowledged, that the excessive increase of appetite, accompanied with an apparent defect in the process of chylicification, which are the usual attendants on diabetes, seem to demonstrate that some derangement exists also in the digestive organs. Possibly this may be secondarily.

Dr. Rollo informs us, in his ingenious publication, that from having duly investigated the most remarkable circumstances and changes which took place during the cure in several cases of this disease, he thinks himself authorized to draw the following inferences:—

1st, That the diabetes mellitus is a disease of the stomach, &c., proceeding from some morbid change in the natural powers of digestion and assimilation.

2d, That the kidneys, and other parts of the system, as the head and skin, are affected secondarily, and generally by sympathy, as well as by a peculiar stimulus.

3d, That the stomach affection consists in an increased action and secretion, with a vitiation of the gastric fluid, and probably in too active a state of the lacteal absorbents.

4th, That the cure of the disease is accomplished by regimen and medicines preventing the formation of sugar, and diminishing the increased action of the stomach.

5th, That confinement or entire abstinence from every species of vegetable matter, or a diet solely of animal food with emetics, hepatized ammonia, and narcotics, comprehend the principal means to be employed.

6th, That the success of the treatment, in a variety of cases, in a great measure establishes the five preceding inferences.

7th, That the saccharine matter of the disease is formed in the stomach, and chiefly from vegetable matter, as has been shewn by the immediate effects produced by the abstinence from vegetable matter and the use of animal food solely.

8th, That acescency is predominant in diabetic stomachs, which continues even some time after the entire abstinence from vegetable matter, and after the formation of sugar; and that while such acescency remains, the disposition to the disease may be supposed to continue.

9th, That the saccharine matter may be removed in three days, and, by avoiding vegetable matter, will not again be re-produced; but when the disease and the disposition to it will be finally removed, cannot be stated with accuracy. Such knowledge may, however, be acquired in those cases where the patients adhere correctly to rules.

10th, That there are two circumstances to be considered in this disease, which we may separate in the progress of the treatment;

as it has been shewn, that though the formation of sugar was prevented, yet the increased action of the stomach remained, and maintained the defect of assimilation, which prevented nutrition. Hence two objects occur in the cure; for it is not yet determined whether the preventing the formation of sugar by an entire abstinence from vegetable matter, and the use of animal food with fats, if properly persevered in, might not ultimately comprehend the other, namely, the removal of the morbid action of the stomach.

11th, That the lungs and skin have no connexion with the production of the disease.

12th, That the quantity of urine is probably in proportion to the quantity of liquids taken in, and has but little dependence on an absorption of fluids from the surface of either skin or lungs.

13th, That though the disease has been shewn to consist in an increased morbid action of the stomach, and probably too great a secretion, with vitiation of the gastric fluid; yet the peculiar or specific condition of either, as forming the disease, is acknowledged to lie in obscurity, and must remain so, until the physiology of healthful digestion is properly explained and established.

The following are the objections which have been made to Dr. Rollo's theory of diabetes.

1st, That saccharine matter has not been detected in the blood, nor in the stomach.

2dly, That the disease often shews symptoms of dyspepsia, or weakness of digestion.

3dly, That the stomach affection may be sympathetic of diseased kidney, from the intimate consent between both: and,

4thly, That the kidneys may be capable of forming or secreting matter under a peculiar action, similar to the breasts of women.

In answer to the first of these objections, Dr. Rollo has replied, that it is difficult to ascertain the exact period in the process of digestion, when this change may be looked for, and therefore an emetic might fail in affording the necessary contents. With respect to the blood, Dr. Dobson affirmed the existence of saccharine matter in diabetic blood. In several instances, the serum was turbid and wheyish, and it did not, on standing, undergo the usual changes of animal matter.

To the second objection which has been made to Dr. Rollo's doctrine, he answers, that the increased action of the stomach is of a morbid kind, and connected with debility: being, therefore, irregular and imperfect, it does not accomplish digestion.

To the third objection, Dr. Rollo has replied, that the stomach affections which exist in diabetes, are entirely different from those which take place in consequence of primary morbid conditions of the kidney. He observes, besides, that most cases of the disease have been preceded by stomach derangement, or have been produced by causes immediately operating on the stomach.

To the fourth objection he observes, that the kidneys are not

secreting organs, but separating only, and that a much greater change in their structure than has ever been found must take place before they could become capable of secreting saccharine matter. He further notices, that in some instances of diabetes the structure of the kidneys has not been visibly changed.

In support of the doctrine which Dr. Rollo advances, he has used the following arguments :

1st, The fact, that a stomach affection generally precedes the urinary characteristic symptoms of the disease.

2dly, The fact, that a stomach affection always attends the disease, which materially differs from that sympathetic of primary kidney affection.

3dly, The fact, that a diet of animal food, with an entire abstinence from vegetable or other matter capable of forming sugar in the stomach, removes speedily the general symptoms, the saccharine matter, the quantity of urine, and its unnatural state.

4thly, The fact, that dissection has shewn no morbid condition of the kidneys, but what may be referable to a continuance of increased action from the application of a simple stimulus, and probably sympathy, augmenting merely the capacity of their vessels.

Such are the arguments brought forward by Dr. Rollo in favour of his theory ; but a still stronger than any of these is the success which has attended his mode of treatment, and which, on his recommendation, has been pursued by other practitioners with a happy effect in some cases of this disease.

Diabetes sometimes comes on slowly and imperceptibly without any previous disorder, and it now and then arises to a considerable degree, and subsists long without being accompanied with evident disorder in any particular part of the system, the great thirst which always, and the voracious appetite which frequently occur in it, being often the only remarkable symptoms ; but it now and then happens, that a considerable affection of the stomach precedes the coming on of the disease, and that in its progress, besides the symptoms already mentioned, there is great dryness of the skin, with a sense of weight in the kidneys, and a pain in the ureters, and the other urinary passages. The temperature of the body is usually below the standard of health. The spirits are depressed, the disposition is equally indifferent to study or amusement, and there is evidently a decline of mental energy, with a loss of the power of virility. Ulcerations of the tongue and gums are of frequent occurrence in diabetes, owing probably to the derangement of the digestive functions. Some morbid change in the alvine excretion always accompanies the diabetic habit, and costiveness is perhaps the most common of these : for in some instances the bowels have been so remarkably torpid, that even the most powerful medicines, in large doses, produced but a trifling effect. Very frequently some degree of inflammation

and swelling about the external orifice of the urethra is to be observed*.

It has been remarked, that diabetes is often preceded or accompanied with a pulmonic affection; and we are told by Dr. Bardsley†, that he does not recollect an instance of the disease which was not attended with some affection of the chest.

Under a long continuance of the disease, the patient becomes much emaciated, the feet oedematous; great debility arises, and an obscure fever, with all the appearances of hectic, prevail. In point of number the pulse is very much diversified: in most cases it is quicker than natural, but sometimes it is below the common standard; but whether it be quick or slow, it is generally such as to denote great debility in the system. In some cases vision becomes very indistinct, and the patient is troubled with vertigo.

The urine, in diabetes, from being at first insipid, clear, and colourless, soon acquires a sweetish or saccharine taste, its leading characteristic in many instances.

From some experiments which were made on diabetic urine, the following conclusions have resulted:—1st, That it contains neither urea, nor the earthy phosphates: 2dly, That it does contain a considerable quantity of a brown extract, united with a proportion of sugar: and, 3dly, That when the sugar is absent, its place is sometimes supplied by a bitter principle.

In some instances the quantity of urine is much greater than can be accounted for from all the sources united. Cases are recorded in which from twenty-five to thirty pints were discharged in the space of a natural day, for many successive weeks and even months; and in which the whole ingesta, as was said, did not amount to half the weight of the urine. To account for this overplus, it has been alleged that water is absorbed from the air by the surface of the body, as also that an extraordinary quantity of water is compounded in the lungs themselves.

Dr. Rutherford, professor of botany in the university of Edinburgh, has found, on examining diabetic blood, that it appears to be deficient in the usual quantity of hydrogen gas. He supposes that this deficiency of hydrogen gas has been consumed by uniting, in the lungs, with the oxygen of the atmosphere, and thus forming water. The water thus generated is taken up by the lymphatics, carried to the bronchial glands, and through them poured into the general mass of blood, whence it is eliminated by the kidneys.

Dr. Darwin is of opinion, that in the aqueous diabetes the cutaneous absorbents frequently imbibe an amazing quantity of atmospherical moisture; and although it has been mentioned by Dr. Rollo, that one patient whom he weighed, after being ten minutes in a warm bath, did not weigh heavier on his leaving it,

* See Cases of Diabetes, by R. Watt, p. 129.

† See his Medical Reports.

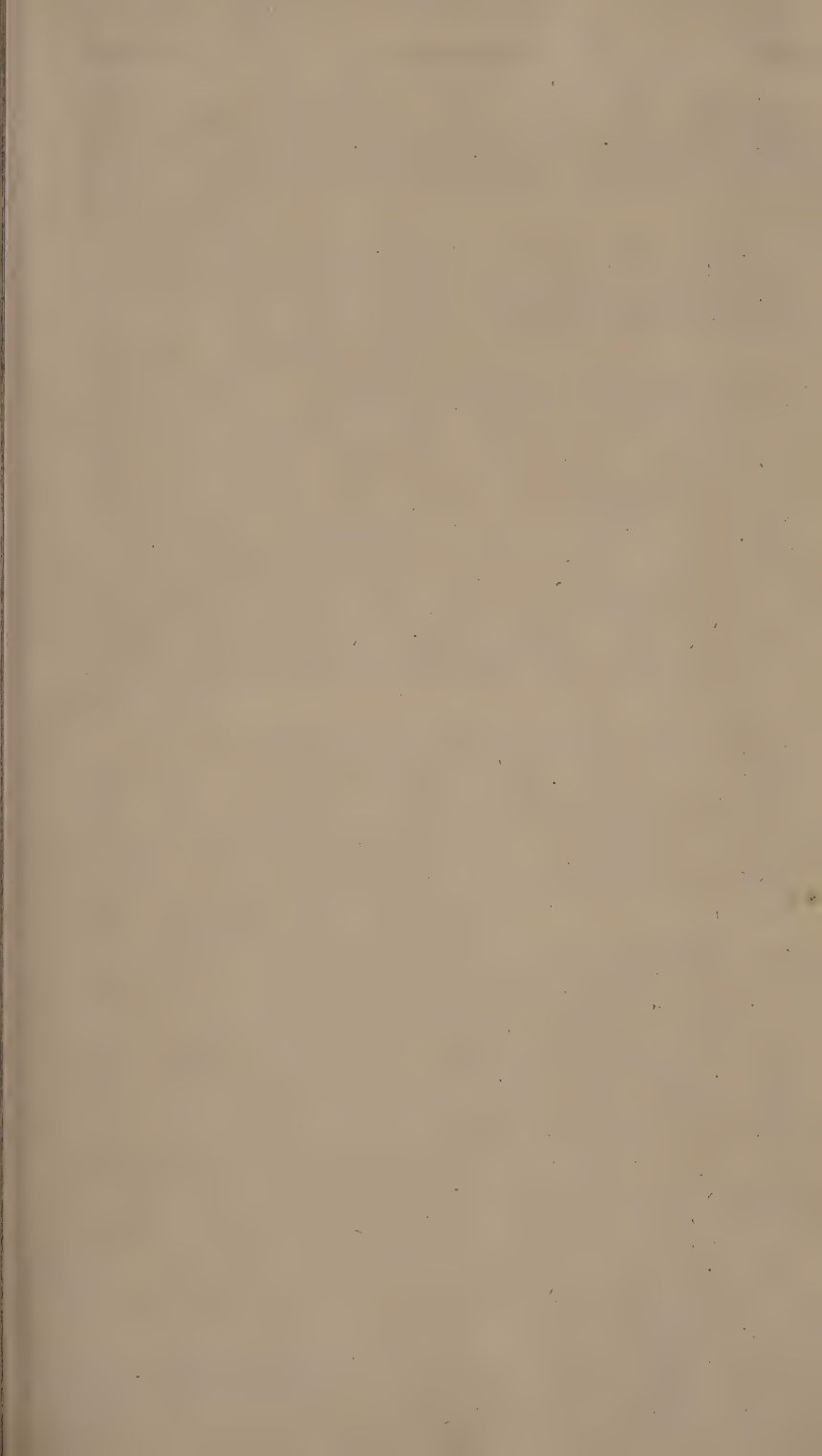
still he suspects that if the bath be made very hot, perhaps much above animal heat, the bather may perspire more than he absorbs, and become in reality lighter. In a bath of moderate heat, provided the patient has been previously exhausted by abstinence or fatigue, he may be likely, Dr. Darwin thinks, to absorb much; but if his system be already full of fluids, from the food and liquids which he has previously eaten and drank, he may not then absorb any thing.

That the cutaneous absorbents can imbibe such a quantity of atmospheric moisture as to account for the surplus of urine over the aliment and fluids which are taken, I am by no means inclined to admit.

It has been usual to regard this disease as always attended with great difficulty of cure and no inconsiderable degree of danger, particularly where it attacks persons advanced in years, or whose constitutions have suffered much by any debilitating cause whatever, especially hard drinking; but if we are to credit Dr. Rollo's report, which seems both candid and ingenuous, and has indeed been confirmed by the testimony of other practitioners who have adopted the mode of treatment he recommends, we may presume that it need not in future be regarded in so unfavourable a light, and that cures may be effected under unpromising circumstances, provided a rigid compliance with his plan is observed.

Great abatement of the thirst, and extraordinary desire for food, the skin becoming soft to the touch and perspirable, the bowels more lax or regular, the urine being voided less frequently, and in smaller quantity each succeeding day, being at the same time of a more natural colour, taste, and smell, the dyspeptic affection being much diminished, and the bodily strength somewhat recruited, together with a return of mental energy, are to be regarded as very favourable symptoms; whereas the contrary denote a fatal termination sooner or later.

Dissections of diabetes have usually shewn the kidneys to be much affected. In some instances they have been found in a loose flabby state, much enlarged in size, and of a pale ash colour; in others they have been discovered much more vascular than in a healthy state, approaching a good deal to what takes place in inflammation, and containing in their infundibula a quantity of whitish fluid, somewhat resembling pus, but without any sign of ulceration whatever. At the same time that these appearances have been observed in their interior, the superficial veins on their surface were found to be much fuller of blood than usual, forming a most beautiful net-work of vessels, the larger branches of which exhibited an absorbent appearance. In many cases of dissection the whole of the mesentery has been discovered to be much diseased, and its glands remarkably enlarged; some of them being very hard, and of an irregular texture; others softer, and of a uniform spherical shape. Many of the lacteals have likewise been seen considerably enlarged. The liver, pancreas, spleen, and stomach,



are in general perceived to be in a natural state; when they are not so, the occurrence is to be considered as accidental. The bladder is now and then found to contain a quantity of muddy urine; in some cases its coats are much thickened, and its size less than natural.

The fat within the thorax, abdomen, and pelvis, in some instances, has seemed entirely converted into a gelatinous-like matter, somewhat of an amber colour, and when slightly pressed between the fingers, did not appear unctuous. The subcutaneous fat is found in general much diminished.

The treatment of diabetes has hitherto been conducted on the principles of diverting the increased discharge elsewhere, and afterwards of restoring the tone of the parts.

The first indication has been attempted by a use of remedies which open the pores, such as emetics exhibited occasionally, diaphoretics, the warm bath of about 96 or 98 degrees of heat, additional clothing, or the removal to a warm climate. As diaphoretics, the pulvis ipecac. compos. and antimonials combined with opium, have principally been employed. For the purpose of diverting the increased discharge, blisters are sometimes applied over the region of each kidney in succession, and the ulcerated parts kept open afterwards by the unguentum cantharidis, or ceratum sabinæ.

The second indication has been aimed at by astringents and tonics. The astringents which have been most used are, alum, zinci sulphas, gum kino, catechu, and the sulphuric and nitric acids, but the first and second seem to be the most efficacious, and may be combined together as below *, or be given separately. The tonics generally employed are the different preparations of cinchona, myrrh, and chalybeates, as advised under the head of Dyspepsia, together with cold bathing.

The Bristol Hot-well waters, when drank at the fountain head, have long been celebrated for their good effects in this disease, and have by many been looked on as a kind of specific; they may therefore be resorted to, if the situation and circumstances of the patient will admit of it; but if not, he must be content to substitute lime-water, which may be taken in the quantity of a pint or quart a day, mixed with an equal proportion of milk, by dissolving about half an ounce of gum. acaciæ in each pint of milk, some further advantages may possibly be derived.

The mephitic alkaline water has been much recommended in this disorder, and it is probable that Schweppe's soda-water may be of

* 1. R Aluminis, gr. xij.
Zinc. Sulphat. gr. ij.
Opii, gr. ss.
Confect. Rosæ, q. s.
ft. Bolus, ter quaterve die sumendus, super-
bibendo Liquor. Calcis, f. ʒiv.

* 1. Take Alum, twelve grains.
Sulphate of Zinc, two grains.
Opium, half a grain.
Confection of Roses, a sufficiency
to form a bolus, to be taken three or four
times a day, washing it down with about
four ounces of Lime-Water.

service, as it is well calculated to relieve acidity in the stomach. The soda will be preferable to the vegetable alkali, as being less likely to act on the kidneys. We are informed by Dr. Trotter* that magnesia to the extent of two drachms daily is a valuable medicine in diabetes, and even that some cures have been effected by it alone. That prepared by Mr. Henry is deserving of a preference.

Administering large doses of opium has occasionally been found highly useful in this disease. Some cases recorded in the 4th volume of the Medical Transactions of the London College of Physicians, by Dr. Warren, clearly shew the very great influence which opium is capable of exerting over the morbid secretion of the kidneys in this disorder, and point it out as a remedy worthy of attention in addition to animal regimen†.

The *tinctura cantharidis* is a medicine which has sometimes been employed in diabetes.

Rubbing the skin with oil, or any adhesive liniment, so as to put a stop to the supposed absorption of fluids thereby, has been recommended in diabetic cases. From experiments made by Dr. Gerrard, of the Liverpool Infirmary, as well as by Dr. Rollo, it does not appear, however, that there is any absorption of fluids by the skin in this disease, for the body gained nothing by immersion in a warm bath: this remedy seems therefore of a doubtful nature.

To assist the effects of the means which have been advised, gentle exercise on horseback, along with frequent friction over the kidneys by means of a flesh-brush or flannel, when not in a blistered state, together with warm clothing next to the skin, ought to be used. The patient is at the same time to abstain from all strong drink, to make use of animal food as much as possible instead of vegetable, and by all means to avoid external cold, as any thing that checks the perspiration cannot fail to determine a large quantity of fluid to the kidneys. While we pursue these steps, we are to obviate costiveness, and keep the body perfectly open, either with rhubarb or an infusion of senna.

When diabetes is symptomatic of hysteria, hypochondriasis, or asthma, the proper remedies for the primary disease should be administered.

The mode of treatment which has just been laid down is, with some small improvement, that which has hitherto been pursued by most practitioners; but it must be acknowledged to have proved in many instances very ineffectual. This being the case, it is proper to make mention of the plan recommended by Dr. Rollo, which is said to have often performed a cure under the most unpromising circumstances.

The indications to be attended to, he supposes to be, to destroy

* See Med. and Physical Journal, vol. xlvii. p. 460.

† See also Clinical and Pathological Reports, by Dr. S. Black, Case I. p. 203.



the saccharine process going on in the stomach; to promote a healthy assimilation; to prevent a supposed increased absorption by the surface; to diminish the increased action, and to change the imagined derangement of the kidneys.

To answer these indications Dr. Rollo enjoins a diet consisting wholly of animal food, abstaining rigidly from every kind of vegetable matter from which sugar may be produced: he likewise enjoins hepatized ammonia to be taken daily in the doses hereafter to be mentioned; the skin to be anointed with prepared lard; exercise to be avoided; antimonial wine with opium to be taken at night; an ulceration about the size of half-a-crown to be formed opposite to each kidney, and the bowels to be kept open by aloes and soap.

Dr. Rollo at first was in the habit of using the potassæ sulphuretum*; but was induced to substitute the hepatized ammonia, under the supposition that the alkali of the former had an improper effect on the kidneys.

We are informed by Mr. Cruickshank, chemist to the Ordnance, in some observations added to Dr. Rollo's publication, that the hepatized ammonia, which promises to be a valuable medicine, is easily prepared by making a stream of pure hepatic gas pass through the liquor ammoniæ subcarbonatis Pharm. Londinensis, until no further absorption is perceived, or until the alkali is saturated. The hepatic or sulphurated hydrogen gas should be obtained for this purpose from artificial pyrites, or sulphuret of iron, and the muriatic acid. We are further informed, that the easiest method of making the artificial pyrites, is to raise a piece of iron in a smith's forge to a white heat, and then to rub it against the end of a roll of sulphur: the iron, at this temperature, immediately combines with the sulphur, and forms globules of pyrites, which should be received into a vessel filled with water. Those globules are to be reduced into a powder, and introduced into the proof, to which a sufficient quantity of muriatic acid is to be added. The dose to an adult should not at first exceed three or four drops three or four times a day; and this dose is to be gradually increased so as to produce a slight giddiness. It should be dropped from the phial at the time of using it into a little distilled water, and be taken immediately.

When we cannot procure hepatized ammonia, we must be content to substitute the subcarbonate of ammonia, which may be given in

* 2. R Potassæ Sulphuret. gr. x.
Confect. Rosæ, q. s. M.
ft. Bolus, ter in die sumendus.

Vel,

3. R Potassæ Sulphuret. gr. x.
Aq. Ment. f. ʒiss.
Syrup. Zingib. f. ʒi. M.
ft. Haustus, ter in die capiendus.

* 2. Take Sulphuret of Potass, ten grains.
Confection of Roses, a sufficiency.
Form them into a bolus, which may be taken
three times a day.

Or,

3. Take Sulphuret of Potass, ten grains.
Mint Water, one ounce and a half.
Syrup of Ginger, one drachm.
This draught is to be taken thrice a day.

the form of pills, ordering about twelve to be taken daily, each containing about four grains of the ammonia.

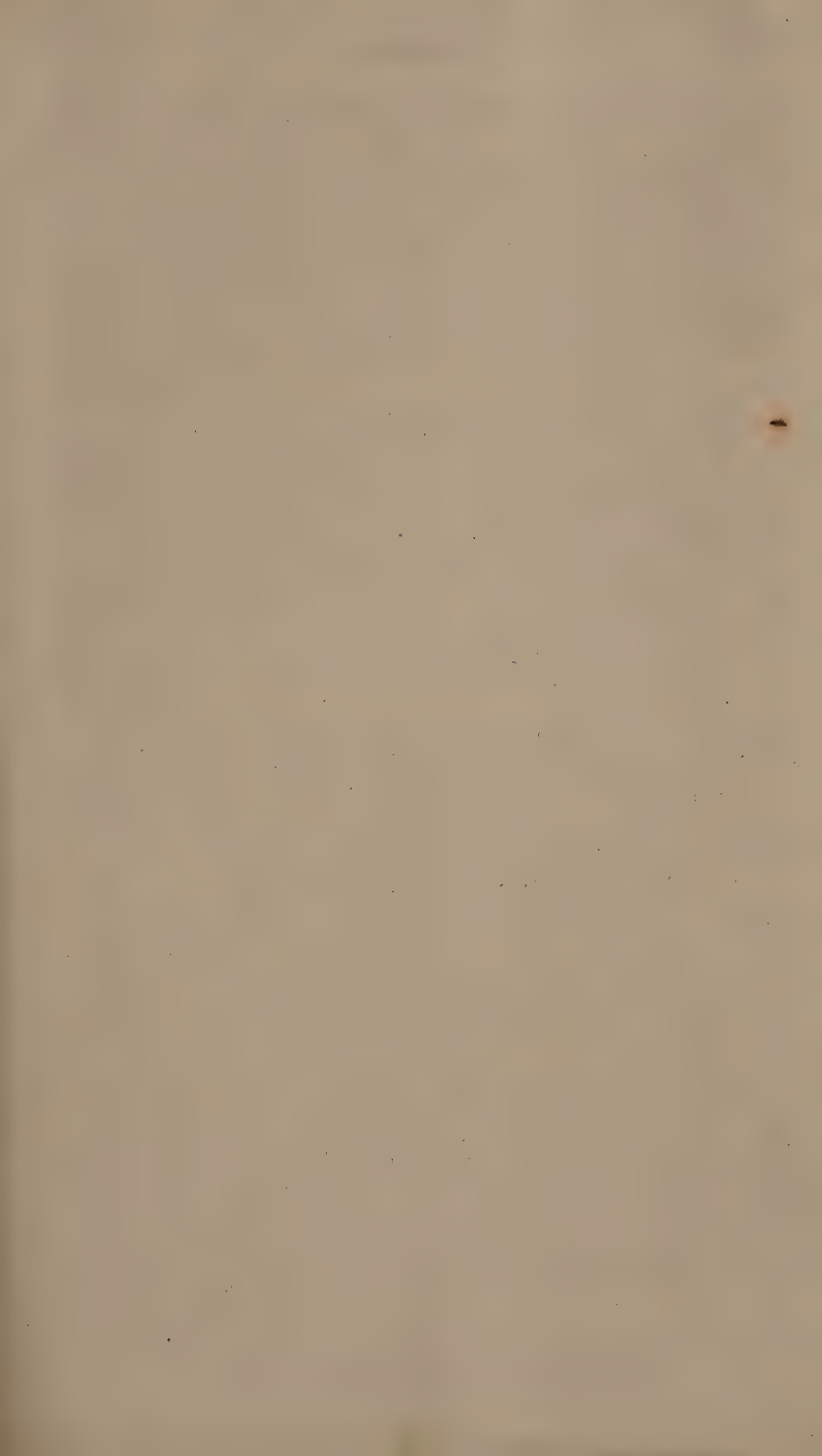
A case of diabetes mellitus is recorded in the thirteenth volume of the Medical Journal by Mr. Earnest, surgeon to the Sheffield General Infirmary, which was successfully treated by putting the patient on a diet consisting principally of animal food, with a generous allowance of porter, giving at the same time the nitric acid in the proportion of from one to three drachms of the acid to two pounds of water, with about an ounce of sugar daily. We are further informed by him, that in three other cases of excessive polydipsia he had known the nitric acid essentially useful. Under the failure of the other means which have been noticed, it will therefore be advisable to pursue this plan.

The nitric acid no doubt is productive of considerable advantage in mitigating the thirst and heat, and thereby lessening the quantity of urine: but of itself it ought to be considered as incompetent to destroy the saccharine impregnation of this fluid, or to arrest the other characteristic symptoms of the disease. A total abstinence from all vegetable food is likewise absolutely necessary.

Numerous indeed are the cases now recorded by different medical writers very clearly demonstrative of the great efficacy of the animal regimen in diminishing the quantity and changing the properties of diabetic urine, and in relieving the concomitant circumstances; and from the repeated observations and experiments which have been made by some of our most eminent physicians, we may, I think, be justified in drawing the inference, that an abstinence from vegetable, and the employment of animal food, together with the nitric acid, opiates, blisters to the loins, and the warm or tepid bath, comprehend the general and most successful method of cure, and are capable of removing the disease in question in its incipient state, when unaccompanied with any dangerous organic affection; and that even in the most acute and aggravated instances of the complaint, a steady perseverance in the proper regimen will arrest the progress of the diabetic symptoms, and bring the patient into a state of convalescence; but that the cinchona, astringents, and alkalies, either alone, or combined with sulphur, (such as the hepatized ammonia,) afford little assistance in subduing diabetes, or even arresting the progress of its characteristic symptoms.

We are informed, however, by Dr. Ferriar*, that he has cured three confirmed cases of this disease by a combination of cinchona, uva ursi, and opium, taken three times a day, in the proportion of a scruple of each of the former to half a grain of the latter; and from the great success he had met with from this medicine he found it unnecessary to try Dr. Rollo's plan. The doses

* See the new edition of his Medical Histories and Reflections.



were taken with lime-water, which was also directed for the patient's common drink.

In order to restore the patient to general health and strength, an admixture of vegetable and animal food is to be gradually and cautiously entered upon, as soon as ever the saccharine impregnation of the urine and the voracious appetite have disappeared. After the cessation of the diabetic symptoms, great attention should be paid to the state of the *primæ viæ*, as the tone of the stomach remains for some time much impaired, and the bowels also become torpid, and are liable to inflammation if evacuations be not speedily procured.

The phenomena which diabetes mellitus exhibits in its progress, and the great degree of vascularity and enlarged size of the kidneys which are observed on dissection, have induced some to suppose that an inflammatory action takes place in these organs; which view of the disease, if well founded, would evidently direct to a mode of treatment the very reverse of what has hitherto been pursued. Instead, therefore, of tonics, astringents, cold bathing, and a stimulating diet of animal food, a mild antiphlogistic regimen, with occasional evacuations, and topical remedies, suited to the habit of the patient and the degree of local affection, would promise, they think*, to fulfil the intentions of the practitioner with success.

Several cases of diabetes which were treated successfully by an antiphlogistic regimen, and very copious depletion by venesection, employed under the most unpromising circumstances, such as a feeble low pulse, loss of strength and spirit, cold and œdematous extremities, &c., are recorded by a late writer†; and they seem to support the opinion, that an inflammatory action does really take place in the kidneys of those labouring under this disease.

In the second of these cases, it appears that the operation was repeated again and again, until above 180 ounces of blood had been abstracted; and the result was a perfect restoration of health. During this time the animal diet was employed, but not rigidly: various medicines were also occasionally interposed; but the great agent, and that to which the attention was almost exclusively directed, was bleeding. A very visible change was observed in the appearance of the blood during this process; at first it was black, and had only a very small proportion of crassamentum; but as more and more of it was taken away, it gradually acquired the appearance which it exhibits in persons who labour under inflammatory fever. The same practice was followed with the same result in all the succeeding cases; the condition of the blood was changed, and the health was restored as in the former instance; and it is to the bleeding alone that any essential benefit is attributed.

* See No. 67 of the Medical and Chirurgical Review.

† See Cases of Diabetes, by Dr. Robert Watt, of Glasgow.

A case is also recorded in one of the numbers of a periodical work*, which was treated by venesection frequently repeated, in an elderly man of seventy-two, with success.

There is a paper in the fifth volume of the Medical Transactions of the London College of Physicians, giving a detail of several cases of diabetes which were successfully treated by the late Dr. Satterley, and which illustrate in a very satisfactory manner the advantages to be derived from a judicious employment of the lancet, as proposed by Dr. Watt. In the first in particular, the symptoms were strongly marked, and the progressive beneficial effects of the successive bleedings so evident, as to induce the patient to desire a more frequent repetition of the remedy than was deemed prudent.

In all the cases the first-drawn blood had the appearance of a homogeneous black mass, possessing no firmness, but resembling treacle, and not separating by rest into serum and crassamentum. After each bleeding, however, it became firmer and more natural in appearance; and in the first of the cases, after the fourth venesection, the crassamentum was covered with a membrane analogous to the buffy coat, but of an intense bright scarlet colour. The quantity of saccharine matter also yielded by each quart of water was found to diminish in proportion as the urine itself was diminished; but even when it was reduced to two quarts daily, sugar was found in it. At seven different times, from February the 19th to March the 11th, one hundred and twenty-six ounces of blood were drawn in this case from the arm, with great and almost uninterrupted mitigation of the symptoms, terminating in a perfect recovery.

ORDER IV.

VESANIÆ.

IMPAIRED judgment, without pyrexia or coma, is the character of this disorder.

MANIA, OR MADNESS.

THE definition of mania, which has hitherto been generally given, is delirium unaccompanied by fever; but this does not seem altogether correct, as a delirium may prevail without any frequency of the pulse, or fever, or without mania, as happens sometimes with women in the hysteric disease.

Some have attempted to give a definition of mania by making it consist in the raising up in the mind images not distinguishable from impressions on the senses, or, as it may be expressed, inten-

* See No. 29 of the Edinburgh Medical and Surgical Journal.

sity of idea, converting imagination into implicit belief, and producing incorrectness of association, incoherence of expression, or incongruity of action. I think mania may be termed a false perception of things, displayed most generally in the opinion formed by the patient of his nearest friends; in a want of due connexion of the train of thought, marked by an incoherence or raving; and in a resistance of the passions to the command of the will, accompanied, for the most part, with a violence of action and furious resentment at restraint. The incapacity of distinguishing the diseased functions of the mind and the irritability of our actions, in the opinion of Dr. Spurzheim *, constitute insanity.

In mania the mind is not perfectly master of all its functions; it receives impressions from the senses which are very different from those produced in health; the judgment and memory are greatly impaired, if not wholly lost; and the irritability of the body is much diminished; maniacs, it is supposed, being capable of resisting the usual morbid effects of hunger and watching. It has also been a generally received opinion, that they can likewise resist the morbid effects of cold; but we are assured by Mr. Haslam †, late apothecary to Bethlem Hospital, that they possess no such exemption. He tells us, that those under strict confinement in that receptacle are particularly subject to mortifications of the feet; and that those who are permitted to go about in the hospital are always to be found as near to the fire as they can get during the winter season.

Mr. Haslam's observation is confirmed by Professor Pinel ‡; and we are cautioned by him against the belief that the power of resisting cold is universally great. He affirms, that seldom a year has passed during which no fatal accident has taken place, from the action of cold upon the extremities, at the Asylum of Bicêtre, in Paris, to which he is physician.

Great insensibility certainly prevails in some states of madness, and a degree of cold which would create much uneasiness to persons of sound mind, might not incommode maniacs; but experience has shewn that they suffer equally from any severity of weather. Some indeed refuse all covering; but these occurrences are not common; and it may be presumed, that by a continued exposure to the atmosphere, such persons might sustain with impunity a low temperature, which would be productive of serious injury to those who are clad according to the exigencies of the season. Such endurance of cold is probably more the effect of habit than of any condition peculiar to insanity.

Some writers contend that insanity is a disease wholly of the mind, and not of the body; whereas others suppose that mania in general depends on a physical origin, or arises from disorgani-

* See his Observations on Insanity.

† ——— on Madness.

‡ ——— Treatise on Insanity.

zation, or morbid action of some part of the body, derangement of the intellectual faculties being only the effect*; which supposition is somewhat supported by the appearances frequently to be observed in the head on dissection. But every species of madness, whether it has originated in the mind or the body, becomes the same by continuance. In madness, both the mind and the body must ultimately be diseased; for a disease of the mind soon produces one in the body.

There are two species of madness, viz. the melancholic, and furious. In both these states the association of ideas is equally incorrect. Between melancholic and furious madness there seems however to exist an intermediate species of the disease. Great eccentricity or singularity, dejection of spirits, and violent tendency to immoral habits, notwithstanding the inculcation of the most correct precepts, and the force of virtuous example, may be regarded as only slighter shades of the disorder. By some writers the disease has been distinguished into many varieties; but probably the best division would be into chronic and acute, periodical and habitual.

Madness is occasioned by affections of the mind, such as anxiety, grief, the love of an absent object, the pain of jealousy, sudden frights, violent fits of anger, the disappointment of ambition, the haughtiness of pride, prosperity humbled by misfortune, religious terror or enthusiasm, the frequent and uncurbed indulgence of any passion; or by violent emotion, and abstruse study. In short, it may be produced by any thing that affects the mind so forcibly as to take off its attention from all other affairs. A very frequent cause of insanity arises from the pain of some imaginary or mistaken idea, which may be termed the *hallucinatio maniacalis*. Violent exercise, intemperance of every kind, and especially in the use of spirituous liquors, a sedentary life, the suppression of periodical and occasional discharges and secretions, repelled eruptions, injuries and malconformation of the head, excessive evacuations, mercury largely and injudiciously administered, and paralytic seizures, are likewise enumerated as remote causes. Mania sometimes arises in consequence of painful protracted parturition. Certain diseases of the febrile kind, particularly phrenitis, have been found at times to occasion madness, where their action has been very violent, or accompanied by delirium.

That insanity originates more generally in a corporeal cause than is allowed, must, I think, be admitted; and perhaps is not unfrequently connected with hepatic derangement. Possibly it may now and then arise from sympathy with parts morbidly excited, and distant from the brain, and this action may be reciprocally exerted.

* See Observations on Insanity, by Dr. Spurzheim.

the Pathology of Insanity, by G. M. Burrows, M.D.





